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September 3, 2010

Ms. Melissa Taylor
United States EPA
Region 1, New England
Five Post Office Square, Suite 100
Mail Code: OSSR07-4
Boston, Massachusetts 02109

Subject: Vapor Intrusion Assessment Summary – 2250 and 2254 Main Street
Nuclear Metals, Inc. Superfund Site, Concord, Massachusetts

Dear Ms. Taylor:

Attached please find a summary of the investigation and our recommendations regarding the potential for vapor intrusion to impact indoor air at 2250 and 2254 Main Street, Concord, Massachusetts.

Please contact me if you have any questions.

Sincerely,

Bruce Thompson
Project Coordinator

cc: Garry Waldeck, MassDEP
Respondents

Attachment – Vapor Intrusion Assessment Update

Geosyntec consultants

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Technical Memorandum

Date: 01 September 2010

To: Mr. John Hunt, *de maximis, inc.*
Mr. Bruce Thompson, *de maximis, inc.*

From: David Adilman, P.G., Geosyntec Consultants
Todd Creamer, P.G. Geosyntec Consultants

Subject: Vapor Intrusion Assessment Update - 2250 and 2254 Main Street
Nuclear Metals Superfund Site,
Concord, Massachusetts

This memorandum summarizes an investigation of the potential for subsurface vapors originating from volatile organic compounds (VOCs) in groundwater to impact indoor air in two structures (2250 Main Street and 2254 Main Street) in Concord, Massachusetts. Geosyntec Consultants, Inc. (Geosyntec) conducted this investigation based on a work plan provided to de maximis, inc. (de maximis) in a memorandum dated 19 June 2009 and revised on 28 October 2009. The vapor intrusion assessment was part of an ongoing Remedial Investigation (RI) at the Nuclear Metals, Inc. (NMI) Superfund Site at 2229 Main Street. Vapor intrusion investigation activities were conducted in November and December 2009 and June 2010, and included building surveys, sub-slab soil gas sampling, high purge volume (HPV) sub-slab soil gas sampling, and outdoor air sampling.

Analysis of soil gas samples indicated concentrations of trichloroethene (TCE) less than 30 µg/m^3 in sub-slab soil gas beneath one structure and no VOC detections beneath the other. Data analysis indicates that the vapor intrusion exposure pathway is incomplete and no further action is recommended.

INTRODUCTION AND CONCEPTUAL MODEL

The two buildings that were the subject of the vapor intrusion assessment overlie a small area downgradient of the NMI Superfund Site in which VOCs, including TCE, have historically been detected in groundwater. VOCs have been detected in groundwater at locations OW-1 and MW-1, downgradient and upgradient, respectively, of the building at 2250 Main Street (see Figure 1). Several rounds of groundwater sampling data reveal that the following analytes have been present historically above reporting limits: 1,1,1-trichloroethane (1,1,1-TCA), 1,1,2-trichloroethane (1,1,2-TCA), 1,1-dichloroethane (1,1-DCA), 1,1-dichloroethene (1,1-DCE), acetone, chloroform, *cis*-1,2-dichloroethene (*cis*-1,2-DCE), tetrachloroethene (PCE), toluene, and TCE. TCE concentrations in groundwater have exceeded the USEPA vapor intrusion screening value of 5 µg/L at both locations during the RI. In November 2009, TCE was detected in groundwater monitoring wells MW-1 and OW-1 at concentrations of 16.3 and 10.9 µg/L, respectively. The depth to groundwater ranges from approximately 26 ft upgradient (i.e., to the south) of 2250 Main Street to 14 ft downgradient (i.e., to

the north). Vadose zone soils on the property are stratified drift deposits comprising fine to medium sand with some silt and a trace of fine gravel.

VOCs can be supplied to the vadose zone either by partitioning out of groundwater into deep soil gas followed by upward diffusion into shallow soil gas, or by extrusion from indoor air to the subsurface followed by downward diffusion. VOCs in the shallow vadose zone near a structure may be drawn into indoor air by advection driven by relative building under pressurization (i.e., vapor intrusion), which is most common during the heating season. Alternatively, VOCs from indoor air sources can extrude into the subsurface during periods of relative building over pressurization (i.e., vapor extrusion). The Massachusetts Department of Environmental Protection (MassDEP) found TCE to be present in the indoor air of residences at other sites not located near subsurface sources at concentrations ranging from 0.29 (50^{th} percentile) to 0.8 $\mu g/m^3$ (90^{th} percentile) (MassDEP, 2008).

METHODS

The investigation included data collection using a "multiple-lines-of-evidence" approach to evaluate the vapor intrusion pathway, which provides greater confidence in the study's conclusion than for example, a single-line approach of sampling indoor air alone. The lines of evidence included walk-through surveys of each building, sampling of sub-slab soil gas and outdoor air during different seasons, comparison of sub-slab soil gas analytical results to indoor air screening values using the USEPA (2002) generic attenuation factor, and the same comparison using a site-specific, modeled attenuation factor. The following paragraphs describe each line of evidence that Geosyntec evaluated as part of the investigation.

Building Surveys

Both buildings were surveyed by interviewing the property owner during a walkthrough of rooms on the ground and first floors. The building surveys were performed to achieve the following objectives:

- assess construction characteristics, occupancy and usage of the buildings;
- identify air exchange and potential vapor intrusion pathways (e.g., slab penetrations);
- identify heating, ventilation and air conditioning (HVAC) operating parameters and practices; and
- inventory chemicals present and used in the buildings (i.e., to evaluate potential indoor sources of VOCs). A hand-held *ppbRAE*® photoionization detector (PID) was used during the building walkthroughs to identify potential indoor sources of VOCs.

Sub-Slab Soil Gas Sampling

Sub-slab soil gas samples were collected during the heating season (22 November and 06 December 2009) and in the cooling season (06 June 2010) to assess a representative range of VOC concentrations throughout a typical year. Sub-slab samples were collected on weekends, at the request of the land owner, to avoid disturbance to building occupants. Heating season samples were collected at 2250 Main Street on 22 November 2009 and at 2254 Main Street on 06 December 2009. Two samples were collected from each building. In June, two samples were collected from the same locations at 2250

Main Street and one sample was collected from 2254 Main Street (2254SS-2). Sample locations are indicated on Figures 2 and 3. In addition, blind duplicate samples were collected during each sampling event. Field sampling forms are included in Attachment A.

Sub-slab probes were installed following guidance from the Reference Handbook for Site-Specific Assessment of Subsurface Vapor Intrusion to Indoor Air (EPRI, 2005). Sub-slab probes consisted of a ball-valve at the end of a 3/8-inch diameter brass pipe sealed into a hole drilled through the basement slab with quick-setting hydrating cement. At each probe location, the valve was closed and the seals were allowed to set for at least 15 minutes prior to beginning sampling activity. Next, the pressure differential between the sub-slab and the interior of the building was measured and recorded at each probe location.

A shroud was placed over each probe and approximately 5% to 20% helium was added to the shroud. Helium was used as a tracer during purging, field screening and sampling to verify that no significant amount of atmospheric air entered the sample through the annular seal between the floor slab and probe or fittings in the sampling train. This ensures that the sample is representative of sub-slab soil gas and not a mixture of sub-slab soil gas and indoor air. The helium concentration in the shroud and the field-screened soil gas was recorded with a model MGD 2002 Helium Detector.

Prior to sample collection, each sub-slab probe was purged using a Tedlar® bag and lung box. A lung box is an air-tight, hard-sided vessel with a flexible bag inside. The soil gas probe is connected to the bag through a length of tubing and soil gas is induced to enter the bag by partially evacuating air from inside the box and outside of the bag. Purged soil gas was field-screened using a PID, a LANDTEC GEM™2000 landfill gas meter with CH_4, O_2 and CO_2 sensors, and the helium detector. Typically, three bag volumes (approximately 3 L total) were purged from each probe and screened with all three instruments on consecutive Tedlar® bag samples. After the difference between successive readings declined to less than approximately 10%, the sampling train was isolated from the lung box and a sample was collected directly into a 1L SUMMA™ canister through a 5 micron inline filter and flow controller. During each of the two sampling events, one blind field duplicate sample was collected and submitted to the laboratory for analysis.

High Purge Volume Sub-Slab Soil Gas Sampling

The building owner requested that sampling work be conducted in a way that would minimize tenant disturbance; therefore, leased spaces in the basement were not used for sampling. To accommodate the owner's request and still meet project data quality objectives, a high purge volume (HPV) sub-slab soil gas sample was collected from location 2250SS-2 on 22 November 2009. Data from HPV sampling can be used to infer the spatial distribution of subsurface VOCs under the building, and the HPV purge method yields a spatially-integrated sample which can allow better estimation of potential impacts to indoor air due to vapor intrusion than traditional, small volume sub-slab samples.

After a traditional sub-slab sample was collected from location 2250SS-2, the temporary brass probe was removed and the existing hole in the basement slab was drilled-out to 1-1/2" diameter to accommodate the larger pipe used for the HPV sampling equipment. Using a Shop Vac® connected to a length of two-inch PVC pipe, approximately 220,000 L of soil gas were removed at a steady flow rate over a period of 63 minutes. During the high volume purge, a slip-stream of the extracted soil gas was directed into a 6L SUMMA™ canister through a 5 micron inline filter and one-hour flow controller, and five instantaneous sub-samples were also collected from the flow into a Tedlar® bag

using a lung box. The Tedlar® bag samples were screened with the PID and LANDTEC GEM™2000 instruments. Periodically during the purge, a Dwyer® Series 471 Thermo-Anemometer was used to measure the velocity of purged gas in the pipe. Extracted gas was vented to the outdoors through a bathroom exhaust fan.

Outdoor Air Sampling

One outdoor air sample (2250OA-1) was collected throughout each sampling event using a 6L Summa™ canister with a 5 micron filter and a flow controller (calibrated to collect an 8-hour time integrated sample) for analysis by USEPA Method TO-15 Low-Level. Low-Level analysis produces reporting limits that are approximately one order of magnitude more sensitive than standard analysis. Outdoor air samples were collected to assess the relative contribution of outdoor air to indoor air quality. The Summa™ canister was placed on top of a stone wall beside the outdoor stairway that leads from the main building down to the parking lot.

Laboratory Analysis

All samples were analyzed by Method TO-15 at Air Toxics Ltd. of Folsom, CA (ATL). The analyte list for the sub-slab soil gas samples consisted of PCE, TCE and VC because these compounds had been detected in groundwater historically. The laboratory reporting limits were approximately 4 to 6 $\mu g/m^3$ for the sub-slab soil gas samples, and approximately 0.4 to 1 $\mu g/m^3$ for the outdoor air samples. The target analyte list was reduced to just TCE after the December 2009 sampling event; the first sampling events were used to screen for PCE and VC as a conservative measure.

RESULTS

Building Surveys

During an initial site visit on 01 June 2009, Geosyntec learned that horizontal vent pipes were installed beneath the basement slabs of both buildings during building construction (for possible future use as part of a radon mitigation system). The perforated sub-slab pipes were laid in a one-foot thick layer of crushed stone, are connected to vertical piping through interior building walls, and terminate within the attic spaces. The pipe in the main building (2250 Main Street) was open-ended while the pipe in the smaller building (2254 Main Street) was sealed. The property owner agreed to seal the pipe in the attic of the main building prior to sample collection. Both buildings were constructed with the ground floor built into the hillside to the south and as a walk-out to the north. Each has a first floor above and the main building has a second floor. Both buildings are occupied and primarily used as commercial office space, though there is a residence on the second (uppermost) floor of the main building. Both buildings are surrounded by grass and landscaping, and separated by an outdoor stairway and a small parking lot.

The building at 2250 Main Street was surveyed on 22 November 2009 and has a ground floor footprint of approximately 2,900 ft^2. There are separate HVAC systems and air intakes on each floor. Total VOC concentrations were measured with the PID in each room and ranged between 0.03 and 0.08 parts per million by volume (ppmv). The only through-going penetrations of the basement slab were several pipes located in the mechanical room in the southwest corner against the southern wall (Figure 2).

The building at 2254 Main Street was surveyed on 06 December 2009 and has a ground floor footprint of approximately 900 ft^2. There are separate HVAC systems and air intakes on each floor. Total VOC concentrations measured with the PID room by room ranged between 0.03 and 0.083 ppmv, except for the garage space on the upper floor which ranged from 0.17 to 0.20 ppmv. No obvious indoor sources of VOCs were identified in either building during the surveys, though the slightly elevated PID readings from the upper floor garage may be derived from the occasional presence of a vehicle in that space. An inventory of materials observed in each room of both buildings is presented in Table 1.

The weather on 22 November 2009 was clear and the temperature was 50° to 60° Fahrenheit (F). The weather was clear and the temperature was 35° to 40° F on 06 December 2009. On 06 June 2010, the weather was stormy with rain and the temperature was 75° F to 78° F. The natural gas-powered heating system was in operation during sampling in both November and December.

Sub-Slab Soil Gas Sampling

A micromanometer was connected to each sub-slab soil gas probe prior to purging or sample collection and both buildings were measured to be under pressurized by approximately 1 Pascal (Pa) (2250 Main Street on 22 November) and 3 Pa (2254 Main Street on 06 December). On 06 June 2010, the same measurements conducted with a Magnehelic® differential pressure gauge indicated that the basement indoor air at 2250 Main Street was approximately neutral with respect to the subsurface (+2 Pa and -2 Pa) and 2254 Main Street was slightly over pressurized by approximately 1 Pa.

TCE was the only analyte detected in sub-slab soil gas samples and it was only detected in the main building. Concentrations of TCE in the soil gas samples from under the main building ranged from 6.5 to 29 $\mu g/m^3$. Results are presented in Table 2. Laboratory analytical reports and Level 1 data validation checklists are included in Attachment B.

High Purge Volume Sub-Slab Soil Gas Sampling

Screening data from the Tedlar® bag samples showed the oxygen concentration rising from 20.0 to 20.6%, carbon dioxide falling from 0.6 to 0.2%, and the total organic vapor (TOV) falling from 0.139 to 0.043 ppmv throughout the purge. These measurements are consistent with a purge that began by removing sub-slab soil gas, as indicated by the slightly depressed oxygen and slightly elevated carbon dioxide and TOV, and progressed to wider areas of influence drawing gas from both diluting (e.g., carbon dioxide and TOV from deeper soil gas) and enriching (e.g., oxygen from the atmosphere) sources. TCE, at a concentration of 10 $\mu g/m^3$, was the only analyte detected in the Summa™ canister sample. No HPV sample was collected in June.

Outdoor Air Sampling

VOCs were not detected in any of the outdoor air samples collected in November or December 2009 or June 2010.

SUMMARY DISCUSSION AND RECOMMENDATIONS

In the smaller building (2254 Main Street), TCE was not detected in three sub-slab samples collected over two different seasons. Two sub-slab soil gas samples were collected during the heating season and one in late spring (June). The lack of TCE in sub-slab soil gas, combined with the low VOC

concentrations detected in groundwater samples, are strong evidence for an incomplete vapor intrusion pathway at this structure. No further action is recommended.

In the main building (2250 Main Street), TCE concentrations measured in discrete sub-slab soil gas samples averaged 24 $\mu g/m^3$ in the late fall and approximately 13 $\mu g/m^3$ in late spring. The total average over all four samples is approximately 19 $\mu g/m^3$. Because the vapor intrusion investigation was intended to assess the long-term exposure potential of building occupants to target compounds, the total average (19 $\mu g/m^3$) is the appropriate value to use for data evaluation because it is more representative of sub-slab soil gas TCE concentrations over the long term than individual samples or other averages.

The HPV sample (in which TCE was detected at a concentration of 10 $\mu g/m^3$) and field screening data support the representativeness of the averaged discrete sub-slab sampling results discussed above. As previously discussed and as indicated in Table 3, soil gas removed from beneath the slab showed steady changes during field screening throughout the purge. These data collected during the HPV sampling did not indicate rising VOC concentrations that could be indicative of an isolated, high-concentration source of TCE at some distance from the probe that could have been missed during discrete sub-slab sampling. Soil gas withdrawn during the HPV was likely replaced by gas from several sources, including indoor air leaked through joints and imperfections in the slab, deeper soil gas with higher concentrations of TCE, shallow soil gas from beyond the footprint of the building, and ultimately outdoor air from outside the footer walls. These differing contributions would likely have diluted the recovered sample by a small factor overall. The relatively consistent concentration of VOCs in sub-slab vapors from both sampling events together with the HPV sample supports the conceptual model that the dominant source of TCE to the vadose zone is from groundwater.

Risk-based target indoor air TCE concentrations can be used as starting points to estimate the long-term averaged sub-slab soil gas concentration that would pose an unacceptable risk to building occupants by estimating the amount of dilution that occurs when sub-slab soil gas crosses the slab and mixes with indoor air. The 1E-6 excess lifetime cancer risk (ELCR) indoor air target for a commercial scenario is 6.1 $\mu g/m^3$, assuming 25 years of occupation, 250 days per year, 8 hours each day. Using the conservative "generic" sub-slab-to-indoor air attenuation factor of 0.1 from the USEPA OSWER Guidance (2002), the TCE concentration in sub-slab soil gas would need to be greater than 61 $\mu g/m^3$ to pose a potential ELCR above 1E-6. This threshold sub-slab soil gas concentration is more than any individual measurement from the main building or the annualized average sub-slab concentration. A second way to estimate a conservative, site-specific attenuation factor is to calculate the interior volume of the building, multiply by a default hourly indoor air exchange rate and divide by the hourly volume of soil gas entering the structure. Using conservative values for the rate of indoor air exchange for a commercial structure (0.25 exchanges/hour) (USEPA, 2004) and for soil gas entry rates into residential-sized structures (10 L/min) (Johnson, 2002), the modeled attenuation factor would be 0.004. This value would allow for an average TCE concentration in the sub-slab of up to approximately 15,000 $\mu g/m^3$ before TCE concentrations in indoor air pose an ELCR above 1E-6. Assumptions used in these calculations are provided in Table 4.

Based on multiple lines of evidence including VOC measurements in groundwater, VOC measurements in the sub-slab over multiple seasons, and generic and modeled attenuation factors, it is

the conclusion of this study that the vapor intrusion pathways to indoor air at both buildings are incomplete and no further action is recommended.

REFERENCES

Johnson, P.C., 2002. Identification of Critical Parameters for the Johnson and Ettinger (1991) Vapor Intrusion Model. *API Research Bulletin 17*. http://apiep.api.org/filelibrary/Bulletin17.pdf

MassDEP, 2008, "Draft Indoor Air Threshold Values for the Evaluation of a Vapor Intrusion Pathway," June 2008, Massachusetts Department of Environmental Protection.

United States Environmental Protection Agency, 2002. *OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from groundwater and Soils (Subsurface Vapor Intrusion Guidance)*. November. EPA503-D-02-004.

United States Environmental Protection Agency, 2004. *User's Guide for Evaluating Subsurface Vapor Intrusion into Buildings*. February.
http://www.epa.gov/oswer/riskassessment/airmodel/johnson_ettinger.htm

TABLES

FIGURES

ATTACHMENTS

TABLES

Table 1
Building Survey Summary
2250-2254 Main Street, West Concord, MA

Geosyntec Consultants

Building	Level	Room	Area	PID Reading	Amount	Volume	Chemical Inventory
				ppb			
2250	Lower	Mechanical	along west wall	40-80	10	1 gal	Paint
					1	1 gal	Mint Tastic All Purpose Cleaner
					1	5 gal	Bucket of paint
					1	1 gal	Soft & Pure Cleaner
					1	bag	Away Germicidal Cleaner
			north wall - west of door	40-50	1	bottle	Oxy-Clean Max Force
					1	bottle	Shout Triple Acting Detergent
			north wall - under sink	30-40	1	bottle	Purex Complete
					1	bottle	Purex Ultra Concentrate
					1	bottle	Downey Fabric Softener
					1	bottle	Clorox 2X Ultra
					1	unit	ABC fire extinguisher
			north wall - cabinet above washer/dryer	60	1	bottle	Blue Eyes Plus - glass cleaner
			at sink	50-56	1	bottle	Soft Soap Antibacterial
		Women's Bathroom	at sink	50-60	1	bottle	Soft Soap Antibacterial
					1	can	Glade Super-Fresh Aerosol - Commercial/Industrial Use
		Hall Area and Base of Stairs		60			None
		Suite L-1	south west office (north of bathrooms)	57-62			Basic office materials, no visible chemicals
			central entry room	60			Basic office materials, no visible chemicals
			north west office	59-64			Basic office materials, no visible chemicals
			north east office	64			Basic office materials, no visible chemicals
			office south of north east office	60			Basic office materials, no visible chemicals
			storage room in center of building	58-62			Basic office materials, no visible chemicals
		Suite L-2	central area (east of stairwell)	35-45			Basic office materials, no visible chemicals
			east north office	39			Basic office materials, no visible chemicals
			east central office	39-40			Basic office materials, no visible chemicals
			south east corner office	38-43			Basic office materials, no visible chemicals
			south central office	37-42			Basic office materials, no visible chemicals
			south of stiarwell, east of mechanical room	36-42			Basic office materials, no visible chemicals

$\mu g/m^3$ = Micrograms per cubic meter.

Table 1
Building Survey Summary
2250-2254 Main Street, West Concord, MA

Geosyntec Consultants

Building	Level	Room	Area	PID Reading	Amount	Volume	Chemical Inventory
				ppb			
2250	First Floor	Suite S-1	north office	54-63			Basic office materials, no visible chemicals
			south side	58-60			Basic office materials, no visible chemicals
		Suite S-2	central entry room	56-63			Basic office materials, no visible chemicals
			kitchen	58-65	1	container	Clorox Wipes
			kitchen - under sink	58-65	1	bottle	Fantastic Oxy Power Cleaner
					1	can	Pledge Funiture Polish
					1	bottle	Windex Window Cleaner
					1	can	WD-40
			south side	54-60			Basic office materials, no visible chemicals
			north side	51-60			Basic office materials, no visible chemicals
		Suite S-3	entry/ reception	58-60			Basic office materials, no visible chemicals
			server room	60			Computer equipment, no visible chemicals
			office on south east side	48-55			Basic office materials, no visible chemicals
			office on north east side	45-52			Basic office materials, no visible chemicals
			office on north west side	46-55			Basic office materials, no visible chemicals
		Men's Bathroom	all	64			None
		Women's Bathroom	all	60			None
2254	Lower	Storage	east wall	40-60	1	bottle	Rite Aid Glass Cleaner
					1	gallon	Permazone Anti-Freeze
					1	can	Armstone & Premiere Plastic Roof Cement
					1	can	Cabot Austalian Timber oil
					1	can	Bayer Pest Plus Germ Killer
					1	can	Ace Home Insect Control
					1	tube	DAP Durabond Concrete Plug
					1	can	Shoo Fly Hornet Spray
					1	tube	DAP - Alex Plus Window Caulking
		North West Office	all	45-55			Basic office materials, no visible chemicals
		South West Work Room	all	30-45			Basic office materials, no visible chemicals
	Upper	Lobby	all	70-83			Computer equipment, no visible chemicals
		North West Office	all	55-70			Basic office materials, no visible chemicals
		Bathroom	all	57-68	1	bottle	Purell Hand Sanitizer
					1	bottle	Windex Window Cleaner
					1	can	Airwick Aerosol Air Freshener
		Garage	east side of building	175-200			Packing peanuts & bubble wrap, saw, taping machine (for packaging), no visible chemicals

Notes: PID = photoionization detector
ppb = parts per billion by volume

Table 2
Laboratory Analytical Results Summary
2250-2254 Main Street, West Concord, MA

Geosyntec Consultants

Sample ID	Date	Units	Tetrachloroethene	Trichloroethene	Vinyl Chloride
Sub-slab Soil Gas					
2250SS-1	11/22/2009	$\mu g/m^3$	8.1/U	**29**	3.0/U
2250SS-1	6/6/2010	$\mu g/m^3$	--	**20**	--
2250SS-2	11/22/2009	$\mu g/m^3$	7.8/U	**19**	2.9/U
2250SS-2	6/6/2010	$\mu g/m^3$	--	**6.5**	--
BD-06062040 (Dup - 2250SS-2)	6/6/2010	$\mu g/m^3$	--	6.0/U	--
2254SS-1	12/6/2009	$\mu g/m^3$	7.0/U	5.5/U	2.6/U
2254SS-2	12/6/2009	$\mu g/m^3$	7.9/U	6.3/U	3/U
BD-1-12062009 (Dup - 2254SS-2)	12/6/2009	$\mu g/m^3$	7.9/U	6.3/U	3/U
2254SS-2	6/6/2010	$\mu g/m^3$	--	6.3/U	--
2250HPV-2	11/22/2009	$\mu g/m^3$	5.6/U	10/U	2.1/U
Outdoor Air					
2250OA-1	11/22/2009	$\mu g/m^3$	1.0/U	0.81/U	0.38/U
2250OA-1	6/6/2010	$\mu g/m^3$	--	0.96/U	--

Notes: "U" = Compound not detected above method quantitation limit, quantitation limit provided.

$\mu g/m^3$ = Micrograms per cubic meter.

"--" = Sample not analyzed for given compound.

Bolded values represent compounds reported at concentrations above laboratory reporting limit.

Table 3

Geosyntec Consultants

High Purge Volume Field Data Summary[1]
2250-2254 Main Street, West Concord, MA

Footprint inside footers (ft^2)	Underslab pore volume[2] (ft^3)	Underslab pore volume (liters)
2800	980	27,750

Paint

	Time	Time Elapesed min	Flow Velocity feet/min	Interval Flow (ft^3)	Interval Flow (liters)	Cumulative Flow (liters)	Bucket of paint	PID ppbv	Oxygen %	CO_2 %
Start Flow	1452	0	5483	--	--	--	--	--	--	--
	1457	5	5184	628	17,780	17,780	0.6	139	20.0	0.6
	1510	18	5480	1543	43,698	61,478	2.2	75	20.4	0.3
	1521	29	5630	1380	39,087	100,565	3.6	90	20.4	0.2
	1531	39	5680	1289	36,506	137,072	4.9	80	20.4	0.2
	1542	50	5440	1431	40,513	177,585	6.4	43	20.6	0.2
End Flow	1555	63		1619	45,856	223,442	8.1	--	--	--
			sum	7891	223,437					

Notes: 1. HPV conducted on 22 November 2009, at sample location 225055-2, in 2250 Main Street.

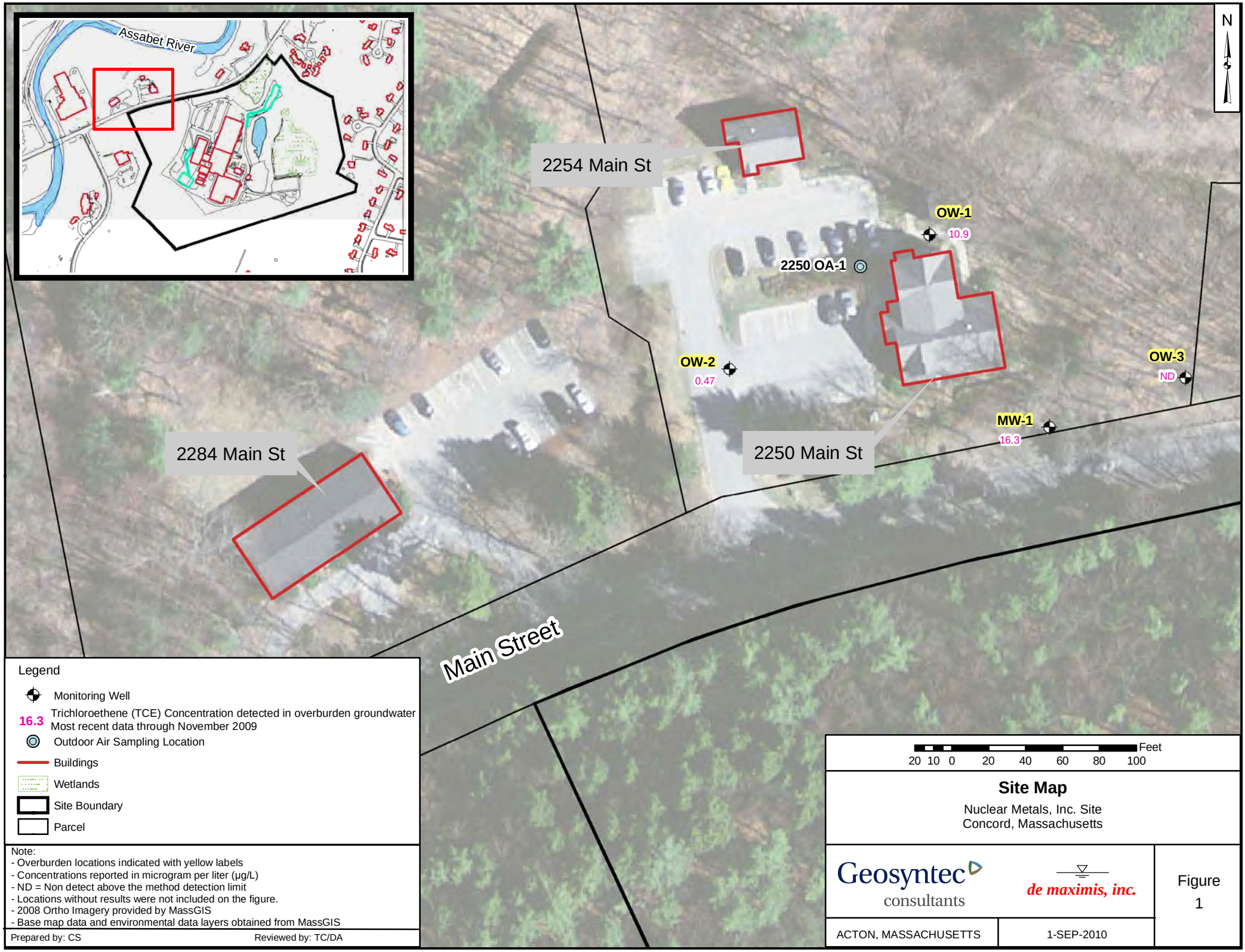
2. It was assumed that the porosity of the engineered sub-base is 0.35, and the building owner indicated that the sub-base is 1-foot thick.

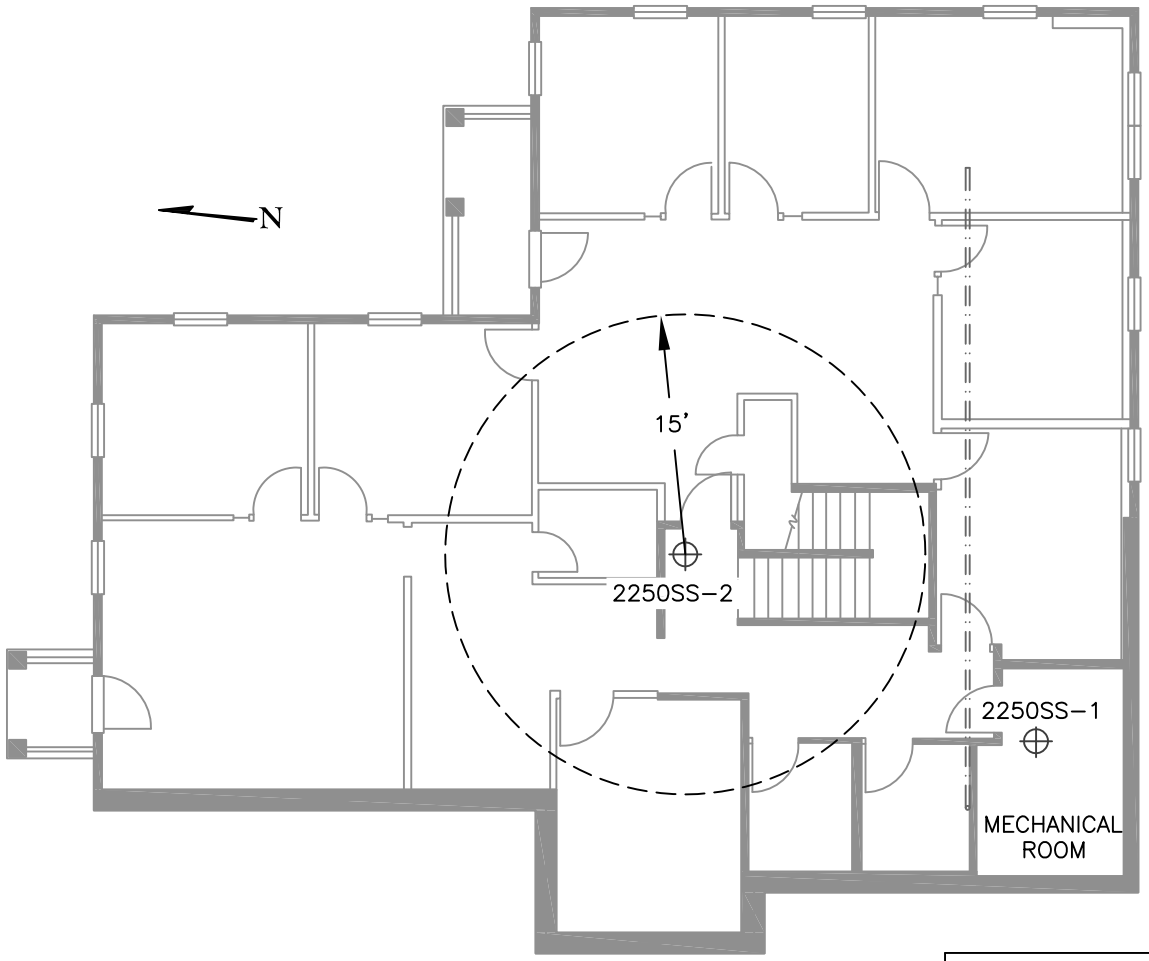
Table 4
Indoor Air Exchange Calculations for Main Building
2250-2254 Main Street, West Concord, MA

Building footprint	2900 269.4	sq ft sq m
Height of basement	2.5	m
Volume of basement	674 674,000	cubic m liters
Indoor air exchange rate	0.25	exchanges/hour[1]
Volume of air through basement level	4,044,000	liters per day
Volumetric of soil gas entry into building[2]	10 14,400	liters per minute liters per day
Attenuation factor	0.004	unitless

Notes:
1. 0.25 exchanges per hour is a conservative exchange rate for a commercial structure (User's Guide for Evaluating Subsurface Vapor Intrusion into Buildings, USEPA 2004).
2. The volumetric soil gas entry to a structure of 10 L/min is at the high end of an observed range from empirical studies compiled by Johnson (2002).
3. The attenuation factor is a product of the volume of air in the basement level of 2250 Main Street, the hourly indoor air exchange rate and 24 hours per day, divided by the daily volumetric soil gas entry into the building.

FIGURES


Assabet River
2254 Main St
OW-1
10,9
2250 OA-1
OW-2
0.47
OW-3
ND
MW-1
16.3
2284 Main St
2250 Main St
Main Street
N
Legend
Monitoring Well
16.3
Trichloroethene (TCE) Concentration detected in overburden groundwater
Most recent data through November 2009
Outdoor Air Sampling Location
Buildings
Wetlands
Site Boundary
Parcel
Note:
- Overburden locations indicated with yellow labels
- Concentrations reported in microgram per liter (µg/L)
- ND = Non detect above the method detection limit
- Locations without results were not included on the figure.
- 2008 Ortho Imagery provided by MassGIS
- Base map data and environmental data layers obtained from MassGIS
Prepared by: CS
Reviewed by: TC/DA
Feet
20 10 0 20 40 60 80 100
Site Map
Nuclear Metals, Inc. Site
Concord, Massachusetts
Geosyntec consultants
de maximis, inc.
Figure 1
ACTON, MASSACHUSETTS
1-SEP-2010



LEGEND

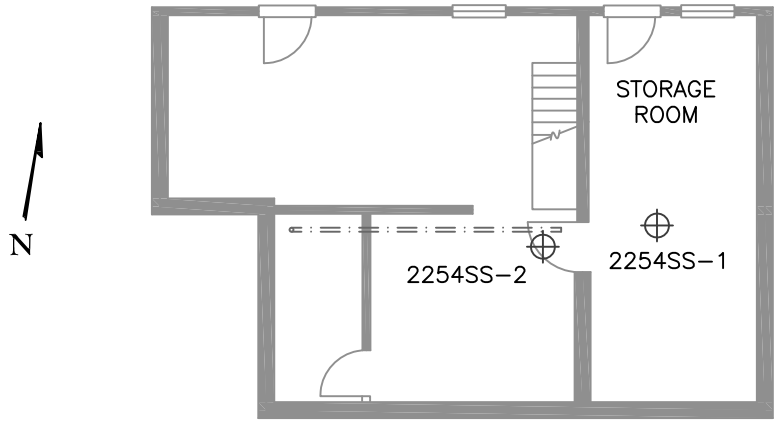
- SUB-SLAB SOIL GAS SAMPLING POINT
- APPROXIMATE AREA OF HIGH PURGE VOLUME SUB-SLAB SOIL GAS SAMPLE
- APPROXIMATE LOCATION OF SUB-SLAB RADON VENT PIPE

Geosyntec consultants

LOWER LEVEL FLOOR PLAN
2250 MAIN STREET

NUCLEAR METALS, INC.
CONCORD, MA

DATE:	13APR10	SCALE:	1":12'
PROJECT NO.	BR0090	FILE NO.	FLOOR_PLANS_061209.DWG
DOCUMENT NO.	–	FIGURE NO.	2



LEGEND

⊕ SUB-SLAB SOIL GAS SAMPLING POINT

APPROXIMATE LOCATION OF SUB-SLAB RADON VENT PIPE

Geosyntec consultants

BASEMENT FLOOR PLAN
2254 MAIN STREET

NUCLEAR METALS, INC.
CONCORD, MA

DATE:	13APR10	SCALE:	1":12'
PROJECT NO.	BR0090	FILE NO.	FLOOR_PLANS_061209.DWG
DOCUMENT NO.	–	FIGURE NO.	3

ATTACHMENT A

COMPLETED FIELD SAMPLING FORMS

-29.95

22505S-1

Geosyntec consultants

www.geosyntec.com

SOIL GAS PROBE MEASUREMENTS

① Project Name: NMI
Date: 11/22/09 Project Number: BR0090
Site Location: Concord, MA
Weather: Clear 50°Fs
Field Personnel: L. Morales T. Creamer
Recorded By: L. Morales

Probe No.: 22505S ☒ Sub-slab probe ☐ Soil gas probe
PPB Mini Rae 2000 Serial No.: 256-10747 Lamp: 10.6 / 11.7 eV
Landtech GEM ~~2000~~ Landfill Gas Meter Serial No. M: GM 1038 USEnvH
MDG 2002 Helium detector Serial No.: 40707
Tracer Gas: ☒ Helium ☐ Other

② Surface Type: ☐ Asphalt ☒ Concrete ☐ Grass ☐ Other
Surface Thickness 4 (inches)/centimeters ☐ Unknown
(i.e., asphalt or concrete)

③ 1 Casing Volume
☒ Sub-slab <0.1 L
Soil gas probe ______ (L)

④ Initial Vacuum (prior to pumping) 10.3 in. H_2O

⑤ Shut in test prior to pneumatic test completed. 50 in. H_2O held for 30 seconds.

⑥ Start of Pneumatic Test: 10:00 10:01

Elapsed Time (min.)	Pump Flow Rate (LPM)	Well Head Vacuum in. H_2O
10:00:15	0.1	0.01
10:00:30	0.2	0.03
10:01:00	0.5	0.08

⑦ Field tubing blank reading (ppm_v) completed? ☒ Yes ☐ No PID Reading 65 ~~ppm~~ ppb indoor air also 65 ppb

⑧ Shut in test prior to purging completed? Yes ☒ No ☐

⑨ Purging

Date	Start Time	End Time	Elapsed Time (min.)	Bag Volume (L)	Purge Rate (LPM)	Cumulative Volume (L)	CH_4 (%)	CO_2 (%)	O_2 (%)	Tracer Gas Shroud (%) Min	Tracer Gas Shroud (%) Max	Tracer Gas Sample (ppm_v, %) (circle one)	VOCs by PID ~~(ppm_v)~~ ppm
11/22/09	10:32:25	10:40	8:35	2.5	200		0.00	0.1	14.6	30	39	10500 - 1%	344
11/22/09	10:54:45	11:02		1.5	200		0.00	0.1	16.2	30	32	20.9	371
11/22/09	11:02:40	11:06:45	4:00										
11/22/09	11:28:33		wait										
11/22/09	12:07									23	26	2.3	

w/ new sample can & flow controller

⑩ Helium concentration in field screened samples is less than 5% of minimum concentration in the shroud? ☐ Yes ☒ No **Note:** 1% helium = 10,000 ppm_v

⑪ Shut in test prior to sample collection completed? Yes ☐ No ☒

⑫ Sample Collection

Date	Time	Sample ID	Summa Canister ID	Flow Controller #	Vacuum Gauge #	Initial Vacuum (in. Hg)	Final Vacuum (in. Hg)
11/22/09	——	~~22505-1~~	300420	FC00362	Aborted	-29.95	Not used
11/22/09	12:40	22505-1 1240 start	1040	FC00584		-30.15	-9.56

Comments: ~~FC00362~~ After first bag collected lines checked b/c He concentration in purge sample was high (30%). Fixed leaky fitting & continued. Aborted & sampled w/ new can inside Mechanical Room

SGP measurements - pneumatic testing

SOIL GAS PROBE MEASUREMENTS

Geosyntec consultants
www.geosyntec.com

① Project Name: NIMI
Date: 11/22/09 Project Number: _____
Site Location: _____
Weather: _____
Field Personnel: _____
Recorded By: _____

Probe No.: _____ ☐ Sub-slab probe ☐ Soil gas probe
Mini Rae 2000 Serial No.: _____ Lamp: 10.6 / 11.7 eV
Landtech GEM 2000 Landfill Gas Meter Serial No. M: _____
MDG 2002 Helium detector Serial No.: _____
Tracer Gas: ☐ Helium ☐ Other _____

② Surface Type: ☐ Asphalt ☐ Concrete ☐ Grass ☐ Other_____
Surface Thickness _____ inches/centimeters ☐ Unknown
(i.e., asphalt or concrete)

③ 1 Casing Volume
☐ Sub-slab <0.1 L
Sail gas probe _____ (L)

⑤ Shut in test prior ta pneumatic test completed,____ in. H_2O held for ___ seconds.

⑥ Start of Pneumatic Test: _____

Elapsed Time (min.)	Pump Flaw Rate (LPM)	Well Head Vacuum in. H_2O
	0.1	
	0.2	
	0.5	

④ Initial Vacuum (prior to pumping) _____ in. H_2O

⑦ Field tubing blank reading (ppm_v) completed? ☐Yes ☐No PID Reading _____ ppm_v

⑧ Shut in test prior to purging completed? Yes ☐ No ☐

⑨ Purging

Date	Start Time	End Time	Elapsed Time (min.)	Bag Volume (L)	Purge Rate (LPM)	Cumulative Volume (L)	CH_4 (%)	CO_2 (%)	O_2 (%)	Tracer Gas Shroud (%) Min	Tracer Gas Shroud (%) Max	Tracer Gas Sample (ppm_v, %) (circle one)	VOCs by PID (ppm_v) PID
11/22/09	12:13	12:18	5:30	1	200	1	0.0	0.1	19.4	23	24	7500 ppm	24
6/22/09	12:20	12:27	7:00	1.4	200	2.4	0.0	0.0	20.2	24	24	7800 ppm	69
6/22/09	12:29	12:36	8:00	1.6	200	4	0.0	0.1	20.2	20.2		1500	379

⑩ Helium concentration in field screened samples is less than 5% of minimum concentration in the shroud? ☒ Yes ☐ No
Note: 1% helium = 10,000 ppm_v

⑪ Shut in test prior to sample collection completed? Yes ☐ No ☐

⑫ Sample Collection

Date	Time	Sample ID	Summa Canister ID	Flow Controller #	Vacuum Gauge #	Initial Vacuum (in. Hg)	Final Vacuum (in. Hg)

Comments:

SGI measurements - pneumatic testing.doc

SOIL GAS PROBE MEASUREMENTS

Geosyntec consultants
www.geosyntec.com

① Project Name: NWI
Date: 11/22/09 Project Number: BR0090
Site Location: Concord, MA
Weather: 50-60°F, Clear
Field Personnel: L. Morales / T. Creamer
Recorded By: L. Morales

Probe No.: 225055-2 ☒ Sub-slab probe ☐ Soil gas probe
Mini Rae 2000 Serial No.: 250-101747 Lamp: 10.6 / 11.7 eV
Landtech GEM 2000 Landfill Gas Meter Serial No. M: GM 6038 (U.S. Environmental)
MDG 2002 Helium detector Serial No.: 40707
Tracer Gas: ☒ Helium ☐ Other

② Surface Type: ☐ Asphalt ☒ Concrete ☐ Gross ☐ Other
Surface Thickness 4" inches/centimeters ☐ Unknown
(i.e., ospholt or concrete)

③ 1 Casing Volume
☒ Sub-slab <0.1 L
Soil gas probe _____ (L)

④ Initial Vacuum (prior to pumping) +1 Pa in. H_2O 12:50

⑤ Shut in test prior to pneumatic test completed, 40 in. H_2O held for 10 seconds.

⑥ Start of Pneumatic Test: 1258

Elapsed Time (min.)	Pump Flow Rate (LPM)	Well Head Vacuum in. H_2O
0:15	0.1	0.01
0:30	0.2	0.02
1:00	0.5	0.07

⑦ Field tubing blank reading (ppm_v) completed? ☒ Yes ☐ Na PID Reading 46 ppm_v

⑧ Shut in test prior to purging completed? Yes ☐ No ☒

⑨ Purging

Date	Start Time	End Time	Elapsed Time (min.)	Bag Volume (L)	Purge Rate (LPM)	Cumulative Volume (L)	CH_4 (%)	CO_2 (%)	O_2 (%)	Tracer Gas Shroud (%) Min	Tracer Gas Shroud (%) Max	Tracer Gas Sample (ppm_v, %) (circle one)	VOCs by PID ~~(ppmv)~~ ppb
11/22/09	13:21:30	13:28:30	6	1.2	200	1.2	0.10	0.1	20.4	22	22	6000	413
11/22/09	13:31	13:38	7	1.4	200	2.6	0.1	0.2	20.0	25	30	6900	189
11/22/09	13:43	13:50	7	1.4	200	4.0	0.1	0.2	19.5	21	23	6500	322

⑩ Helium concentration in field screened samples is less than 5% of minimum concentration in the shroud? ☐ Yes ☐ No
Note: 1% helium = 10,000 ppm_v

⑪ Shut in test prior to sample collection completed? Yes ☐ No ☐

⑫ Sample Collection

Date	Time	Sample ID	Summa Canister ID	Flow Controller #	Vacuum Gauge #	Initial Vacuum (in. Hg)	Final Vacuum (in. Hg)
11/22/09	1351 → 1356	225055-2	34105	FC00443	3.35	-30.16	

Comments: Ground floor, base of stairway.

SGP measurements - pneumatic testing.doc

SOIL GAS PROBE MEASUREMENTS

HIGH A PURGE

Geosyntec consultants
www.geosyntec.com

① Project Name: NIMI
Date: 11/22/09 Project Number: BR009D
Site Location: Concord, MA
Weather: Partly Cloudy 60°F
Field Personnel: T. Creamer, L. Morales
Recorded By: L. Morales

Probe No.: 2250 HPV-2 ☒ Sub-slab probe ☐ Soil gas probe
Mini Rae 2000 Serial No.: 250-101747 Lamp: 10.6 / 11.7 eV
Landtech GEM 2000 Landfill Gas Meter Serial No. M: GM 6392
MDG 2002 Helium detector Serial No.: 40707 US Environmental
Tracer Gas: ☐ Helium ☒ Other N2

② Surface Type: ☐ Asphalt ☒ Concrete ☐ Grass ☐ Other ____
Surface Thickness 4 inches/centimeters ☐ Unknown
(i.e., asphalt ar concrete)

③ 1 Casing Volume
☒ Sub-slab <0.1 L
Soil gas probe ____ (L)

⑤ Shut in test prior to pneumatic test completed, ____ in. H_2O held for ____ seconds.

⑥ Start of Pneumatic Test: ____

Elapsed Time (min.)	Pump Flow Rate (LPM)	Well Head Vacuum in. H_2O
	0.1	
	0.2	
	0.5	

④ Initial Vacuum (prior to pumping) ____ in. H_2O

⑦ Field tubing blank reading (ppm_v) completed? ☐ Yes ☐ Na PID Reading ____ ppm_v

⑧ Shut in test priar to purging completed? Yes ☐ No ☐

⑨ Purging

Date	Start Time	End Time	Elapsed Time (min.)	Bag Volume (L)	Purge Rate (LPM)	Cumulative Volume (L)	CH_4 (%)	CO_2 (%)	O_2 (%)	Tracer Gas Shroud (%) Min	Tracer Gas Shroud (%) Max	Tracer Gas Sample (ppm_v, %) (circle one)	VOCs by PID (ppm_v)
	1452												

⑩ Helium concentration in field screened samples is less than 5% of minimum concentration in the shroud? ☐ Yes ☐ No
Note: 1% helium = 10,000 ppm_v

⑪ Shut in test prior to sample collectian completed? Yes ☐ No ☐

⑫ Sample Collection

Date	Time	Sample ID	Summa Canister ID	Flow Controller #	Vacuum Gauge #	Initial Vacuum (in. Hg)	Final Vacuum (in. Hg)
11/22/09			35979	FC00322		30.14	

Comments:

SGT measurements - pneumatic testing.ai

HPV TESTING

Geosyntec consultants
www.geosyntec.com

Project Name: NMI
Project #: 3620090
Date: 11/22/09
Site Location: Concord, MA
Recorded by: L. MORALES ~~K. CREAMER~~
Field Personnel: L Morales / K Creamer
Weather: Partly Cloudy 60°Fs

Probe ID: 2250 HPV-2
Time at Start of Test: 1452
Mini Rae 2000 Serial #: 250-101474 } US ENVTL Rental
Landtech GEM 2000 Serial #: GM 6398 }
Extraction Velocity (m/s), (ft/m):
Extraction Vacuum (in H_2O): 12

Sample ID: 2250 HPV-2
Sample Start Time: 1452
Sample End Time:
PDMS/Summa Can #: 35979
Flow Cont. #: FC00322

Sample Type (pdms/summa): 6L 100 mL/min
Date: 11/22/09
Initial Canister Vacuum: 30.14
Final Canister Vacuum:

Duration (mins)	PID (ppm)	O_2%	CO_2%	CH_4%	Comments (flow, vac, etc)
1452	—	—	—	—	begin flow 5480 fpm
1455	—	—	—	—	open Summa can
1457	139 ppb	20.0	0.6	0.0	5184 fpm 12" H2O
1510	75	20.4	0.2	0.0	5430 fpm @ 12" H2O
1521	90	20.4	0.2	0.0	5630 fpm @ 12"
1531	80	20.4	0.2	0.07	indoors MiRae = 60 ppb
					→ 5680 fpm @ 12"
1542	43	20.6	0.2	0.0	5440 fpm @ 12"
1555	—	—	—	—	end flow
1555	—	—	—	—	close Summa Can
	schedule 40 2" PVC I.D.			2.049"	

HPV Test Form.xls

+3.2 Pat

Geosyntec consultants

www.geosyntec.com

SOIL GAS PROBE MEASUREMENTS

① Project Name: NWI
Date: 12/6/09 Project Number: BR0090
Site Location: Concord MA
Weather: high 30°F's Clear
Field Personnel: L. Morales / T. Creamer
Recorded By: L. Morales

Probe No.: 225455-1 ☒ Sub-slab probe ☐ Soil gas probe
Mini Rae 2000 Serial No.: 250-101704 Lamp: 10.6 / 11.7 eV
Landtech GEM 2000 Landfill Gas Meter Serial No. M: GM-10493/07
MDG 2002 Helium detector Serial No.: 040574
Tracer Gas: ☒ Helium ☐ Other

② Surface Type: ☐ Asphalt ☒ Concrete ☐ Grass ☐ Other
Surface Thickness (i.e., asphalt or concrete) 4" (inches)/centimeters ☐ Unknown

③ 1 Casing Volume
☒ Sub-slab <0.1 L
Soil gas probe ______ (L)

④ Initial Vacuum (prior to pumping) +3.2 Pascal in. H_2O

⑤ Shut in test prior to pneumatic test completed, 3.8 in. H_2O held for 30 seconds.

⑥ Start of Pneumatic Test: 17:06

Elapsed Time (min.)	Pump Flow Rate (LPM)	Well Head Vacuum in. H_2O
30 s	0.1	0.01
1:00	0.2	0.07
1:30	~~0.5~~ 0.4	0.23
	0.5	

⑦ Field tubing blank reading (ppm$_v$) completed? ☒ Yes ☐ No PID Reading 0.0 ppm$_v$

⑧ Shut in test prior to purging completed? Yes ☒ No ☐ 158/30 sec @ 9" Hg

⑨ Purging

Date	Start Time	End Time	Elapsed Time (min.)	Bag Volume (L)	Purge Rate (LPM)	Cumulative Volume (L)	CH_4 (%)	CO_2 (%)	O_2 (%)	Tracer Gas Shroud (%) Min	Tracer Gas Shroud (%) Max	Tracer Gas Sample (ppm$_v$, %) (circle one)	VOCs by PID (ppm$_v$)
12-6-09	17:30:30	17:40:0	10	1.5	~200	1.5	0	0	20.7	16.5	21	625	330
	1742:00	17:51	9	1.5	~200	3	0	0	20.7	17	19.5	925	455
	1753:30	18:03:30	10	1.5	~200	4.5	0	0	20.7	17.2	19	2475	475
	18:06:30	1816:00	10	sample									

⑩ Helium concentration in field screened samples is less than 5% of minimum concentration in the shroud? ☒ Yes ☐ No
Note: 1% helium = 10,000 ppm$_v$

⑪ Shut in test prior to sample collection completed? Yes ☐ No ☐

⑫ Sample Collection

Date	Time	Sample ID	Summa Canister ID	Flow Controller #	Vacuum Gauge #	Initial Vacuum (in. Hg)	Final Vacuum (in. Hg)
12-6-09	1816	225455-1	34109	FC00752		-29.57	-1.55

Comments: 105" from nearest wall to probe and 52" from doorway to probe
180 ppb indoor air
Gem 2000 was reading 21.1% O_2 for indoor air

SGP measurements - pneumatic testing.ai

SOIL GAS PROBE MEASUREMENTS

Geosyntec consultants
www.geosyntec.com

① Project Name: NMI
Date: 12/6/09 Project Number: BR0090
Site Location: Concord, MA
Weather: high 30°Fs' Clear
Field Personnel: T Creamer / L Morales
Recorded By: L. Morales

Probe No.: 225455-2 ☒ Sub-slab probe ☐ Soil gas probe
Mini Rae 2000 Serial No.: 250-101704 Lamp: 10.6 / 11.7 eV
Landtech GEM 2000 Landfill Gas Meter Serial No. M: GM-10493/07
MDG 2002 Helium detector Serial No.: 040514
Tracer Gas: ☒ Helium ☐ Other

② Surface Type: ☐ Asphalt ☒ Concrete ☐ Grass ☐ Other
Surface Thickness 4 inches/centimeters ☐ Unknown
(i.e., asphalt or concrete)

③ 1 Casing Volume
☐ Sub-slab <0.1 L
Soil gas probe ____ (L)

④ Initial Vacuum (prior to pumping) ±2.5 pa in. H_2O

⑤ Shut in test prior to pneumatic test completed 80 in. H_2O held for 20 seconds. ~~4" Hg for 30 sec~~ LTM
1-10" rotometer used; small rotometer does not hold

⑥ Start of Pneumatic Test:

Elapsed Time (min.)	Pump Flow Rate (LPM)	Well Head Vacuum in. H_2O
153530	0.1	0.03
153600	0.2	0.08
153630	0.5	~1
		1-5" Magnehelic not responding

⑦ Field tubing blank reading (ppm_v) completed? ☐ Yes ☒ No PID Reading ____ ppm_v

⑧ Shut in test prior to purging completed? Yes ☒ No ☐ 4" Hg for 30 sec

⑨ Purging

Date	Start Time	End Time	Elapsed Time (min.)	Bag Volume (L)	Purge Rate (LPM)	Cumulative Volume (L)	CH_4 (%)	CO_2 (%)	O_2 (%)	Tracer Gas Shroud (%) Min	Tracer Gas Shroud (%) Max	Tracer Gas Sample (ppm_v, %) (circle one)	VOCs by PID (ppm_v)
12/6/09	16:16:15	16:22:45	6.5	1	~200	1	0	0	21.1	19.4	23.2	675	364
	16:25:45	16:34:45	9	1.5	↓	2.5	0	0	21.1	17.9	21	~~3650~~	261
	16:37:30	16:46:30	9	1.5	↓	4	0	0	20.8	18	22	4400	208
Sample	16:49:30	17:01											

⑩ Helium concentration in field screened samples is less than 5% of minimum concentration in the shroud? ☒ Yes ☐ No **Note:** 1% helium = 10,000 ppm_v

⑪ Shut in test prior to sample collection completed? Yes ☐ No ☒ ~~4" Hg for 30 sec~~ LTM

⑫ Sample Collection

Date	Time	Sample ID	Summa Canister ID	Flow Controller #	Vacuum Gauge #	Initial Vacuum (in. Hg)	Final Vacuum (in. Hg)
12/6/09	17:01	225455-2	2387	FC00905		-29.61	-4.59
12/6/09	—	BD-1206200?	34604	FC00905		-29.57	-4.53

Comments: large crack in slab paralleling threshold of doorway into supply room - on workshop side. - see drawing on back. Ambient PID reading ~110ppb

SOIL GAS PROBE MEASUREMENTS

Geosyntec consultants
130 Research Lane, Suite 2
Guelph, Ontario, Canada N1G 5G3
(519)822-2230 Fax (519)822-3151

① Project Name: DMH - Hartley VI
Date: 6/6/2010 Project Number: BR0090
Site Location: Concord, MA
Weather: high 70°Fs, Scattered Showers
Field Personnel: T. Creamer L. Morales
Recorded By: L. Morales

Probe No.: 225055-1 ☒ Sub-slab probe ☐ Soil gas probe
Mini Rae 2000 Serial No.: 250-102002 Lamp: 10.6 / 11.7 eV
Landtech GEM 2000 Landfill Gas Meter Serial No. M: GM12027
MDG 2002 Helium detector Serial No.: 10702
Tracer Gas: ☒ Helium ☐ Other

② Surface Type: ☐ Asphalt ☒ Concrete ☐ Grass ☐ Other
Surface Thickness 4 inches/centimeters ☐ Unknown
(i.e., asphalt or concrete)

③ 1 Casing Volume
☒ Sub-slab <0.1 L
Soil gas probe _____ (L)

④ Initial Vacuum (prior to pumping) -0.01 in. H_2O

⑤ Shut in test prior to pneumatic test completed, 30 in. H_2O held for 20 seconds.
100-500 Rotameter leaks

⑥ Start of Pneumatic Test: 0927

Elapsed Time (min.)	Pump Flow Rate (LPM)	Well Head Vacuum in. H_2O
0:30	~~0.1~~ 0.3	0.01
~~0:30~~ 1:00	~~0.2~~ 0.5	0.04
	~~0.5~~	

⑦ Field tubing blank reading (ppm_v) completed? ☒ Yes ☐ No PID Reading 140 ~~ppm~~ PPB_v

⑧ Shut in test prior to purging completed? Yes ☒ No ☐ Equilibrates @ 3" Hg

⑨ Purging (Stopwatch measured.)

Date	Start Time	End Time	Elapsed Time (min.)	Bag Volume (L)	Purge Rate (LPM)	Cumulative Volume (L)	CH_4 (%)	CO_2 (%)	O_2 (%)	Tracer Gas Shroud (%) Min	Tracer Gas Shroud (%) Max	Tracer Gas Sample (ppm_v, %) (circle one)	VOCs by PID ~~(ppm$_v$)~~ PPB_v
6/6/10	0949	09:54	3:39	1	200 ml/min	1	0	0.1	20.1	7	10.5	16850	199
6/6/10	10:08:10	10:14	6:0853	1	200 ml/min	2	-	-	-	~~7~~ 7	10.3	2500	-
6/6/10	10:17:30	10:28	10:15	2	200	4	0	0.2	20.3	7.2	9.7	2250	8
6/6/10	10:30	10:40	10:20	2	200	6	0	0.2	20.3	7.9	10.7	2000	0
6/6/10	~~10:47~~ 1055	11:04	9:25										

⑩ Helium concentration in field screened samples is less than 5% of minimum concentration in the shroud? ☒ Yes ☐ No
Note: 1% helium = 10,000 ppm_v

⑪ Shut in test prior to sample collection completed? Yes ☒ No ☐

⑫ Sample Collection

Date	Time	Sample ID	Summa Canister ID	Flow Controller #	Vacuum Gauge #	Initial Vacuum (in. Hg)	Final Vacuum (in. Hg)
6/6/2010	11:04	225055-1	2089	0923		-29.35	-0.39

Comments: First measurement to leak test probe setup. - Removed shroud & tightened fittings - Subsequent samples showed no He leaks

SGP measurements - pneumatic testing.ai

SOIL GAS PROBE MEASUREMENTS

Geosyntec consultants
130 Research Lane, Suite 2
Guelph, Ontario, Canada N1G 5G3
(519)822-2230 Fax (519)822-3151

① Project Name: NMI - Hurley VI
Date: 6/6/2010 Project Number: BR0090
Site Location: Concord, MA
Weather: High 70°Fs, Scattered Showers
Field Personnel: T. Creamer, L. Morales
Recorded By: L. Morales

Probe No.: 2250-SS-2 ☒ Sub-slab probe ☐ Soil gas probe
Mini Rae 2000 Serial No.: 250-102002 Lamp: 10.6 / 11.7 eV
Landtech GEM 2000 Landfill Gas Meter Serial No. M: GM-12027
MDG 2002 Helium detector Serial No.: 10702
Tracer Gas: ☒ Helium ☐ Other

② Surface Type: ☐ Asphalt ☒ Concrete ☐ Grass ☐ Other
Surface Thickness 4" inches/centimeters ☐ Unknown
(i.e., asphalt or concrete)

③ 1 Casing Volume
☒ Sub-slab <0.1 L
Soil gas probe _____ (L)

④ Initial Vacuum (prior to pumping) 0.01 in. H_2O

⑤ Shut in test prior to pneumatic test completed, 61 in. H_2O held for 30 seconds.
Rotameter leaks - still ok

⑥ Start of Pneumatic Test: 11:35

Elapsed Time (min.)	Pump Flow Rate ~~(LPM)~~ mL/min	Well Head Vacuum in. H_2O
0:10	~~0.1~~ 250	0.01
0:20	~~0.2~~ 400	0.03
0:35	~~0.5~~ 500	0.045

⑦ Field tubing blank reading (ppm_v) completed? ☐ Yes ☐ No PID Reading 140 ~~ppm~~ ppbv

⑧ Shut in test prior to purging completed? Yes ☒ No ☐ 11" Hg

⑨ Purging — measured on stopwatch

Date	Start Time	End Time	Elapsed Time (min.)	Bag Volume (L)	Purge Rate (LPM)	Cumulative Volume (L)	CH_4 (%)	CO_2 (%)	O_2 (%)	Tracer Gas Shroud (%) Min	Tracer Gas Shroud (%) Max	Tracer Gas Sample (ppm_v, %) (circle one)	VOCs by PID ~~(ppmv)~~ PPbv
6/6/10	11:42	11:48	6:21	1.2	200	1.2	~	~	~	9.0	9.9	7200	134
6/6/10	11:50	12:00	10:00	2	200	2.2	0 ~~20.4~~	0	20.4	9.2	10.4	9100	~~34~~
6/6/10	12:01:30	12:13	10:30	2	200	4.2	0	0	20.4	12	13.6	5950	14
6/6/10	12:14:30	12:30											

⑩ Helium concentration in field screened samples is less than 5% of minimum concentration in the shroud? ☒ Yes ☐ No
Note: 1% helium = 10,000 ppm_v

⑪ Shut in test prior to sample collection completed? Yes ☐ No ☐

⑫ Sample Collection

Date	Time	Sample ID	Summa Canister ID	Flow Controller #	Vacuum Gauge #	Initial Vacuum (in. Hg)	Final Vacuum (in. Hg)
6/6/2010	1230	2250SS-2	36480	6536		-28.17	-2.37
6/6/2010		~~2250SS-2-DUP~~ UM	37300	6536		-28.18	-2.28
		ID for Dup = "BD-06062010					

Comments: First purge sample to test for He leaks - ok!

SGP measurements - pneumatic testing.ai

SOIL GAS PROBE MEASUREMENTS

Geosyntec consultants
130 Research Lane, Suite 2
Guelph, Ontario, Canada N1G 5G3
(519)822-2230 Fax (519)822-3151

① Project Name: NMI - Hurley VI
Date: 6/6/2010 Project Number: BR0090
Site Location: Concord, MA
Weather: High 70's, Scattered Showers
Field Personnel: J. Creaman, L. Morales
Recorded By: L. Morales

Probe No.: 2254SS-2 ☒ Sub-slab probe ☐ Soil gas probe
Mini Rae 2000 Serial No.: 250-102002 Lamp: 10.6 / 11.7 eV
Landtech GEM 2000 Landfill Gas Meter Serial No. M: GM 120274
MDG 2002 Helium detector Serial No.: 10702
Tracer Gas: ☒ Helium ☐ Other

② Surface Type: ☐ Asphalt ☒ Concrete ☐ Grass ☐ Other
Surface Thickness 4" inches/centimeters ☐ Unknown
(i.e., asphalt or concrete)

③ 1 Casing Volume
☒ Sub-slab <0.1 L
Soil gas probe _____ (L)

④ Initial Vacuum (prior to pumping) +0.005 in. H_2O bldg over press w/ ss

⑤ Shut in test prior to pneumatic test completed: 50 in. H_2O held for 20 seconds
0-500 vacuum gauge used w/o valve

⑥ Start of Pneumatic Test: 1319

Elapsed Time (min.)	Pump Flow Rate (LPM)	Well Head Vacuum in. H_2O
0:15	~~0~~ 6.250	0.005
0:45	0.2 .400	0.095
1:15	0.5	0.05

⑦ Field tubing blank reading (ppm_v) completed? ☒ Yes ☐ No PID Reading 140 ~~ppm~~ b

⑧ Shut in test prior to purging completed? Yes ☒ No ☐ 19" Hg for 20sec

⑨ Purging

Date	Start Time	End Time	Elapsed Time (min.)	Bag Volume (L)	Purge Rate (LPM)	Cumulative Volume (L)	CH_4 (%)	CO_2 (%)	O_2 (%)	Tracer Gas Shroud (%) Min	Tracer Gas Shroud (%) Max	Tracer Gas Sample (ppm_v, %) (circle one)	VOCs by PID ~~(ppm)~~ ppbv
6/6/10	13:32:30	13:40	7:00	1.4	200	1.4	0.0	0.0	20.7	11.8	14.5	0	0
6/6/10	13:47:30	13:51:30	8:20	1.6	200	3	0.0	0.0	20.7	10.1	14.1	133	10501
6/6/10	13:52:30	14:01:30	9:00	1.8	200	4.8	0.0	0.0	20.8	~~10.8~~ 9.3	16.3	2050	0.0
6/6/10	~~13~~ 14:02:30	14:07:30											

⑩ Helium concentration in field screened samples is less than 5% of minimum concentration in the shroud? ☐ Yes ☐ No
Note: 1% helium = 10,000 ppm_v

⑪ Shut in test prior to sample collection completed? Yes ☒ No ☐ 9:11

⑫ Sample Collection

Date	Time	Sample ID	Summa Canister ID	Flow Controller #	Vacuum Gauge #	Initial Vacuum (in. Hg)	Final Vacuum (in. Hg)
6/6/2010	14:07:30	2254SS-2	35622	~~933~~ 0391		-29.04	-3.61

Comments: * indoor reading from GEM on data table

SGP measurements - pneumatic testing.ai

ATTACHMENT B

LABORATORY REPORTS AND DATA VALIDATION CHECKLISTS

Geosyntec consultants

Data Validation Checklist
Level 1

Reviewed by: Laura Morales
Project/Task No: BR0090/16*6
Review Date: 28-Dec-09

ATTACHED TO THIS FORM:	YES	NO
1) DATA REPORT COVER SHEETS	X	
2) LABORATORY NARRATIVE:	X	

Site: NMI
Laboratory Report # 0911556A
Sample Date: 22-Nov-09
Report Date: 11 December 1009

Answer all questions "Yes" or "No". Any answer in a box requires commen

Review Item	YES	NO	COMMENTS
Chain-of-custody correctly completed:	X		
Transcription errors in chain-of-custody, field forms, or lab reports.		X	2250 OA-1 was outdoor air (background) sample. On this COC, but data included in lab report: 0911556B.
All data requested received:	X		
All analyses within holding times:	X		
Compounds detected below reporting limit:		X	
Surrogates within control for each sample:	X		
Reporting Limits Elevated by greater than 10X:		X	
Matrix Spike/Matrix Spike Duplicate (MS/MSD) within recovery control limits	n/a		
Relative percent difference (RPD) within control limits based on MS/MSD results:	n/a		
Laboratory Control Sample (LCS) within control limits:	X		
Continuing Calibration Verification (CCV) within control limits:	X		
Constituents detected above reporting limits in field equipment, travel or method blank samples:		n/a	Final field pressures are consistent with lab receipt pressures.
Any laboratory qualifiers applied to data:		X	
Laboratory corrective actions implemented:		n/a	
Are data acceptable quality:	X		
EDD received:	X		
EDD checked against hard copy:	X		
EDD ready for upload:		X	Sample 2250SS-1 should be J-flagged in the database because the helium concentration was >5% of shroud concentration in pre-sample screening bag.
Further Validation required:	X		

Comments: Final field pressures are consistent with lab receipt pressure (0.06" Hg - 0.15" Hg difference in measurements)
For sample 2250SS-1, the helium conc. in final screening bag (1.15%) was 5.7%of average shroud conc. (22%)
See attached correction factor calculation and data correction.
For sample 2250SS-2, the helium conc. in final screening bag (0.65%) was 3% of average shroud conc. (22%)

Air Toxics LTD.
Laboratory Services Since 1989

12/11/2009
Mr. Dave Adilman
GeoSyntec Consultants
289 Great Rd.

Acton MA 01720-4766

Project Name: NMI
Project #: BR0090
Workorder #: 0911556A

Dear Mr. Dave Adilman

The following report includes the data for the above referenced project for sample(s) received on 11/24/2009 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Bryanna Langley at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Bryanna Langley
Project Manager

Air Toxics LTD.
Laboratory Services Since 1989

WORK ORDER #: 0911556A

Work Order Summary

CLIENT:	Mr. Dave Adilman GeoSyntec Consultants 289 Great Rd. Acton, MA 01720-4766	**BILL TO:**	Accounts Payable GeoSyntec Consultants 5901 Broken Sound Parkway Suite 300 Boca Raton, FL 33487
PHONE:	978-263-9588	**P.O. #**	
FAX:		**PROJECT #**	BR0090 NMI
DATE RECEIVED:	11/24/2009	**CONTACT:**	Bryanna Langley
DATE COMPLETED:	12/11/2009		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	2250SS-1	Modified TO-15	4.5 "Hg	15 psi
02A	2250SS-2	Modified TO-15	3.5 "Hg	15 psi
03A	2250HPV-2	Modified TO-15	5.5 "Hg	5 psi
03AA	2250HPV-2 Lab Duplicate	Modified TO-15	5.5 "Hg	5 psi
04A	Lab Blank	Modified TO-15	NA	NA
04B	Lab Blank	Modified TO-15	NA	NA
04C	Lab Blank	Modified TO-15	NA	NA
05A	CCV	Modified TO-15	NA	NA
05B	CCV	Modified TO-15	NA	NA
05C	CCV	Modified TO-15	NA	NA
06A	LCS	Modified TO-15	NA	NA
06B	LCS	Modified TO-15	NA	NA
06C	LCS	Modified TO-15	NA	NA

CERTIFIED BY: Linda D. Fruman DATE: 12/11/09

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/10
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15
GeoSyntec Consultants
Workorder# 0911556A

Two 1 Liter Summa Canister and one 6 Liter Summa Canister samples were received on November 24, 2009. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
Daily CCV	</= 30% Difference	</= 30% Difference; Compounds exceeding this criterion and associated data are flagged and narrated.
Sample collection media	Summa canister	ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction no performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

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Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: 2250SS-1

Lab ID#: 0911556A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	1.2	5.4	6.4	29

Client Sample ID: 2250SS-2

Lab ID#: 0911556A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	1.1	3.6	6.2	19

Client Sample ID: 2250HPV-2

Lab ID#: 0911556A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.82	1.9	4.4	10

Client Sample ID: 2250HPV-2 Lab Duplicate

Lab ID#: 0911556A-03AA

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.82	2.0	4.4	11

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Client Sample ID: 2250SS-1

Lab ID#: 0911556A-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**y120511**	**Date of Collection: 11/22/09 12:40:00 PM**	
Dil. Factor:	**2.38**	**Date of Analysis: 12/5/09 02:34 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
Trichloroethene	1.2	5.4	6.4	29
Tetrachloroethene	1.2	Not Detected	8.1	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
4-Bromofluorobenzene	118	70-130
1,2-Dichloroethane-d4	128	70-130

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Client Sample ID: 2250SS-2

Lab ID#: 0911556A-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**y120611**	**Date of Collection: 11/22/09 1:51:00 PM**	
Dil. Factor:	**2.29**	**Date of Analysis: 12/6/09 02:25 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.1	Not Detected	2.9	Not Detected
Trichloroethene	1.1	3.6	6.2	19
Tetrachloroethene	1.1	Not Detected	7.8	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
4-Bromofluorobenzene	114	70-130
1,2-Dichloroethane-d4	127	70-130

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Client Sample ID: 2250HPV-2

Lab ID#: 0911556A-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**y120713**	**Date of Collection: 11/22/09 3:55:00 PM**	
Dil. Factor:	**1.64**	**Date of Analysis: 12/7/09 07:14 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.82	Not Detected	2.1	Not Detected
Trichloroethene	0.82	1.9	4.4	10
Tetrachloroethene	0.82	Not Detected	5.6	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
4-Bromofluorobenzene	104	70-130
1,2-Dichloroethane-d4	111	70-130

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Client Sample ID: 2250HPV-2 Lab Duplicate

Lab ID#: 0911556A-03AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**y120714**	**Date of Collection: 11/22/09 3:55:00 PM**	
Dil. Factor:	**1.64**	**Date of Analysis: 12/7/09 07:48 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.82	Not Detected	2.1	Not Detected
Trichloroethene	0.82	2.0	4.4	11
Tetrachloroethene	0.82	Not Detected	5.6	Not Detected

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
4-Bromofluorobenzene	102	70-130
1,2-Dichloroethane-d4	111	70-130

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Client Sample ID: Lab Blank

Lab ID#: 0911556A-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**y120505**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/5/09 10:11 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
4-Bromofluorobenzene	112	70-130
1,2-Dichloroethane-d4	113	70-130

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Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 0911556A-04B

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**y120610**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/6/09 01:41 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
4-Bromofluorobenzene	114	70-130
1,2-Dichloroethane-d4	116	70-130

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Client Sample ID: Lab Blank

Lab ID#: 0911556A-04C

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**y120704**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/7/09 01:24 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
4-Bromofluorobenzene	103	70-130
1,2-Dichloroethane-d4	96	70-130

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Client Sample ID: CCV

Lab ID#: 0911556A-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**y120502**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/5/09 07:59 AM**	

Compound	%Recovery
Vinyl Chloride	86
Trichloroethene	99
Tetrachloroethene	98

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
4-Bromofluorobenzene	111	70-130
1,2-Dichloroethane-d4	115	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 0911556A-05B

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**y120607**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/6/09 11:33 AM**	

Compound	%Recovery
Vinyl Chloride	84
Trichloroethene	98
Tetrachloroethene	93

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
4-Bromofluorobenzene	113	70-130
1,2-Dichloroethane-d4	123	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 0911556A-05C

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**y120702**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/7/09 11:54 AM**	

Compound	%Recovery
Vinyl Chloride	100
Trichloroethene	98
Tetrachloroethene	103

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
4-Bromofluorobenzene	100	70-130
1,2-Dichloroethane-d4	97	70-130

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Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 0911556A-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**y120503**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/5/09 08:32 AM**	

Compound	%Recovery
Vinyl Chloride	80
Trichloroethene	90
Tetrachloroethene	92

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
4-Bromofluorobenzene	113	70-130
1,2-Dichloroethane-d4	115	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 0911556A-06B

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**y120608**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/6/09 12:19 PM**	

Compound	%Recovery
Vinyl Chloride	76
Trichloroethene	87
Tetrachloroethene	89

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
4-Bromofluorobenzene	118	70-130
1,2-Dichloroethane-d4	118	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 0911556A-06C

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**y120703**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/7/09 12:42 PM**	

Compound	%Recovery
Vinyl Chloride	98
Trichloroethene	92
Tetrachloroethene	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
4-Bromofluorobenzene	106	70-130
1,2-Dichloroethane-d4	98	70-130

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4022

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Page 1 of 1

Project Manager: David Adilman
Collected by: (Print and Sign) T. Creamer/L. Morales [signature]
Company: Geosyntec Consultants Email: dadilman@geosyntec.com
Address: 289 Great Rd City: Acton State: MA Zip: 01720
Phone: 978-263-9588 Fax: 978-263-9594

Project Info:
P.O. #
Project # BR0090
Project Name: NMI

Turn Around Time:
☒ Normal
☐ Rush
specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
01A	225OSS-1 (~~2250-T4m~~)	1040	11/22/09	1234b	TO-15	-30.15	-4.56		
02A	225OSS-2	34105	11/22/09	13:51	TO-15	-30.16	-3.35		
	Empty	3733	—	—	Not Used	-29.95	—		
03A	225DHPY-2	35979	11/22/09	1555	TO-15	-30.14	-5.61		
	225ØOA-1	14011	11/22/09	1625	TO-15LL	-30.09	-3.90		

Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
[signature] 11/23/09 1700	FedEx TN 793043105703
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
	Monica Fregzen ATL 11/24/09 900
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time

Notes: For all TO-15 Analyses: PCE, TCE, VC

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Fed Ex		NA	Good	Yes No (None)	0911556

Form 1293 rev.11

Geosyntec consultants

Data Validation Checklist
Level 1

Reviewed by: Laura Morales
Project/Task No: BR0090/16*6
Review Date: 28-Dec-09

ATTACHED TO THIS FORM:	YES	NO
1) DATA REPORT COVER SHEETS	X	
2) LABORATORY NARRATIVE:	X	

Site: NMI
Laboratory Report # 0911556B
Sample Date: 22-Nov-09
Report Date: 9 December 1009

Answer all questions "Yes" or "No". Any answer in a box requires commen

Review Item	YES	NO	COMMENTS
Chain-of-custody correctly completed:	X		
Transcription errors in chain-of-custody, field forms, or lab reports.		X	2250 OA-1 was outdoor air (background) sample. Reported in a separate lab report from the rest of the samples on the COC.
All data requested received:	X		
All analyses within holding times:	X		
Compounds detected below reporting limit:		X	
Surrogates within control for each sample:	X		
Reporting Limits Elevated by greater than 10X:		X	
Matrix Spike/Matrix Spike Duplicate (MS/MSD) within recovery control limits	n/a		
Relative percent difference (RPD) within control limits based on MS/MSD results:	n/a		
Laboratory Control Sample (LCS) within control limits:	X		
Continuing Calibration Verification (CCV) within control limits:	X		
Constituents detected above reporting limits in field equipment, travel or method blank samples:		n/a	
Any laboratory qualifiers applied to data:		X	
Laboratory corrective actions implemented:		X	
Are data acceptable quality:	X		
EDD received:	X		
EDD checked against hard copy:	X		
EDD ready for upload:	X		
Further Validation required:		X	

Comments: Final field pressure is consistent with lab receipt pressure (0.5" Hg difference in measurements)

Air Toxics LTD.
Laboratory Services Since 1989

12/9/2009
Mr. Dave Adilman
GeoSyntec Consultants
289 Great Rd.

Acton MA 01720-4766

Project Name: NMI
Project #: BR0090
Workorder #: 0911556B

Dear Mr. Dave Adilman

The following report includes the data for the above referenced project for sample(s) received on 11/24/2009 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Bryanna Langley at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Bryanna Langley
Project Manager

Air Toxics LTD.
Laboratory Services Since 1989

WORK ORDER #: 0911556B

Work Order Summary

CLIENT:	Mr. Dave Adilman GeoSyntec Consultants 289 Great Rd. Acton, MA 01720-4766	**BILL TO:**	Accounts Payable GeoSyntec Consultants 5901 Broken Sound Parkway Suite 300 Boca Raton, FL 33487
PHONE:	978-263-9588	**P.O. #**	
FAX:		**PROJECT #**	BR0090 NMI
DATE RECEIVED:	11/24/2009	**CONTACT:**	Bryanna Langley
DATE COMPLETED:	12/09/2009		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
04A	2250OA-1	Modified TO-15	3.4 "Hg	5 psi
05A	Lab Blank	Modified TO-15	NA	NA
06A	CCV	Modified TO-15	NA	NA
07A	LCS	Modified TO-15	NA	NA

CERTIFIED BY: Linda D. Truman DATE: 12/09/09

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/10
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15
GeoSyntec Consultants
Workorder# 0911556B

One 6 Liter Summa Canister (100% Certified) sample was received on November 24, 2009. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
ICAL %RSD acceptance criteria	+- 30% RSD with 2 compounds allowed out to < 40% RSD	30% RSD with 4 compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	</= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases
Sample collection media	Summa canister	ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV
N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: 2250OA-1

Lab ID#: 0911556B-04A

No Detections Were Found.

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: 2250OA-1

Lab ID#: 0911556B-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**z120414**	**Date of Collection: 11/22/09 4:25:00 PM**	
Dil. Factor:	**1.51**	**Date of Analysis: 12/4/09 07:29 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.15	Not Detected	0.81	Not Detected
Tetrachloroethene	0.15	Not Detected	1.0	Not Detected
Vinyl Chloride	0.15	Not Detected	0.38	Not Detected

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	108	70-130
4-Bromofluorobenzene	104	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 0911556B-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**z120413**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/4/09 06:38 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.10	Not Detected	0.54	Not Detected
Tetrachloroethene	0.10	Not Detected	0.68	Not Detected
Vinyl Chloride	0.10	Not Detected	0.26	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	108	70-130
4-Bromofluorobenzene	100	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 0911556B-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**z120407**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/4/09 12:50 PM**	

Compound	%Recovery
Trichloroethene	107
Tetrachloroethene	100
Vinyl Chloride	105

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	96	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 0911556B-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**z120403**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/4/09 10:21 AM**	

Compound	%Recovery
Trichloroethene	108
Tetrachloroethene	109
Vinyl Chloride	106

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	96	70-130

Air Toxics Ltd. Sample Receipt Confirmation Cover Page

Thank you for choosing Air Toxics Ltd. We have received your samples and have listed any Sample Receipt Descrepancies below.

In order to expedite analysis and reporting, please review the attached information for accuracy.

For corrections call: **Bryanna Langley at 916-985-1000**

ATL will proceed with the analysis as specified on the Chain of Custody and Sample Receipt Summary page.

Please note : The Sample Receipt Confirmation, including the total workorder charge, is subject to change upon secondary review. Our aim is to provide a confirmation to you in a timely manner. Sample Receipt Discrepancies, if any, may not include discrepancies regarding sample receipt pressure(s). Additionally, the Chain of Custody (COC) will be provided with the final report.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 .FAX (916) 985-1020
Hours 6:30 A.M to 5:30 P.M. PST

Air Toxics LTD.
Laboratory Services Since 1989

SAMPLE RECEIPT SUMMARY

WORKORDER 0911556A

Client

Mr. Dave Adilman
GeoSyntec Consultants
289 Great Rd.
Acton, MA 01720-4766

Phone

978-263-9588

Fax

Date Promised: 12/10/09
Date Completed:
Date Received: 11/24/09
PO#:
Project#: BR0090 NMI

Sales Rep: TL

Total $: $ 819.00
Logged By: MW

Fraction	Sample #	Analysis	Collected	Amount$
01A	2250SS-1	Modified TO-15	11/22/2009	$160.00
02A	2250SS-2	Modified TO-15	11/22/2009	$160.00
03A	2250HPV-2	Modified TO-15	11/22/2009	$160.00

Misc. Charges	1 Liter Summa Canister (3) @ $25.00 each., Shipment 69037	$75.00
	6 Liter Summa Canister (1) @ $45.00 each., Shipment 69037	$45.00
	6 Liter Summa Canister (100% Certified) (1) @ $80.00 each., Shipment 69	$80.00
	Blue Body Flow Controller (4) @ $25.00 each., Shipment 69037	$100.00
	Blue Body Flow Controller (100% Certified) (1) @ $25.00 each., Shipmen	$25.00
	Fitting w/ Pink Ferrule (7) @ $2.00 each.	$14.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: Nuclear Metal/13657

BILL TO: Accounts Payable
GeoSyntec Consultants
5901 Broken Sound Parkway
Suite 300
Boca Raton, FL 33487

Analysis Code: TO-14A

TERMS:

Reporting Method: Modified TO-15 (Sh)-1,4-Dioxane, TCE, PCE & VC

Air Toxics LTD.
Laboratory Services Since 1989

SAMPLE RECEIPT SUMMARY

WORKORDER 0911556B

Client

Mr. Dave Adilman
GeoSyntec Consultants
289 Great Rd.
Acton, MA 01720-4766

Phone

978-263-9588

Fax

Date Promised: 12/10/09
Date Completed:
Date Received: 11/24/09
PO#:
Project#: BR0090 NMI

Sales Rep: TL

Total $: $ 185.00
Logged By: MW

Fraction	Sample #	Analysis	Collected	Amount$
04A	2250OA-1	Modified TO-15	11/22/2009	$185.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: Nuclear Metal/13657

BILL TO: Accounts Payable
GeoSyntec Consultants
5901 Broken Sound Parkway
Suite 300
Boca Raton, FL 33487

Analysis Code: pptv

TERMS: NET 90

Reporting Method: Modified TO-15-LL (Sh)-1,4-Dioxane, TCE, PCE & VC

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
Relinquishing signature on this document indicates that samples being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager: David Adelman
Collected by: (Print and Sign) T. Cremin/K. Morales
Company: Ecosystems Consultants Email: dadelman@
Address: 289 Great Rd City: Acton State: MA Zip: 01720
Phone: 978-263-9585 Fax: 978-263-9594

Project Info:
P.O. #:
Project #: BR0090
Project Name: NMI

Turn Around Time:
☒ Normal
☐ Rush
(specify)

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt (psi)	Final (psi)
	~~225055-1~~ ~~2250-1 6m~~	1040	11/22/09	12:40	TO-15	-30.15	-4.56		
	225055-2	34105	11/22/09	13:51	TO-15	-30.16	-3.35		
	Empty	3733	—	—	Not Used	-29.95	—		
	225DHPV-2	35979	11/22/09	16:25	TO-15	-30.14	-5.61		
OA	225000A-1	14011	11/22/09	16:25	TO-15LL	-30.09	-3.90		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
[signature]	11/23/09 1700	FedEx ID 793043855703	
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
		Monica Nguyen ATL	11/24/09 900
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes: For all TO-15 Analyses: PCE, TCE, VC

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	FedEx		NA	Good	Yes No (None)	0911556

Form 1284 rev.11

Air Toxics LTD.
Laboratory Services Since 1989

Method : Modified TO-15 (Sh)-1,4-Dioxane, TCE, PCE & VC

CAS Number	Compound	Rpt. Limit (ppbv)

CAS Number	Compound	
75-01-4	Vinyl Chloride	0.50
79-01-6	Trichloroethene	0.50
123-91-1	1,4-Dioxane	2.0
127-18-4	Tetrachloroethene	0.50

CAS Number	Surrogate	Method Limits
2037-26-5	Toluene-d8	70-130
17060-07-0	1,2-Dichloroethane-d4	70-130
460-00-4	4-Bromofluorobenzene	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Method : Modified TO-15-LL (Sh)-1,4-Dioxane, TCE, PCE & VC

CAS Number	Compound	Rpt. Limit (ppbv)

CAS Number	Compound	
75-01-4	Vinyl Chloride	0.10
79-01-6	Trichloroethene	0.10
123-91-1	1,4-Dioxane	0.10
127-18-4	Tetrachloroethene	0.10

CAS Number	Surrogate	Method Limits
17060-07-0	1,2-Dichloroethane-d4	70-130
2037-26-5	Toluene-d8	70-130
460-00-4	4-Bromofluorobenzene	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Unreturned Media/Equipment

The following media/equipment are outstanding:

Shipped on: Nov 17 2009 2:55PM

Equipment Type	Physical ID	Outstanding Qty	Amount
1 Liter Summa Canister	12036	1	$750.00
1 Liter Summa Canister	34109	1	$750.00
1 Liter Summa Canister	34606	1	$750.00
1 Liter Summa Canister	34615	1	$750.00
6 Liter Summa Canister	94600	1	$750.00
Blue Body Flow Controller	FC00146	1	$250.00
Blue Body Flow Controller	FC00397	1	$250.00
Blue Body Flow Controller	FC00752	1	$250.00
Blue Body Flow Controller	FC00905	1	$250.00
Blue Body Flow Controller	fc6573	1	$250.00
Duplicate Sampling T		1	$5.00
Gauge-Vacuum		1	$50.00

Shipped on: Nov 18 2009 1:35PM

Equipment Type	Physical ID	Outstanding Qty	Amount
Gauge-Vacuum		1	$50.00

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 .FAX (916) 985-1020
Hours 6:60 A.M to 5:30 P.M. PST
E-mail to:samplereceiving@airtoxics.com

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Page 1 of 1

Project Manager David Adelman

Collected by: (Print and Sign) T. Creamer/L. Morales

Company Geosyntec Consultants Email dadelman@geosyntec.com

Address 289 Great Rd City Acton State MA Zip 01720

Phone 978-263-9588 Fax 978-263-9594

Project Info:
P.O.# _____
Project # BR0090
Project Name NM1

Turn Around Time:
☒ Normal
☐ Rush
_____ specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
	~~2250-1 4m~~ 225055-1	1040	11/22/09	12:40	TO-15	-30.15	-4.56		
	225055-2	34105	11/22/09	13:51	TO-15	-30.16	-3.35		
	Empty	3733	—	—	Not Used	-29.95	—		
	225OHPV-2	35979	11/22/09	1555	TO-15	-30.14	-5.61		
04A	2250OA-1	14011	11/22/09	1625	TO-15LL	-30.09	-3.90		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
[signature]	11/23/09 1700	FedEx Tr. # 793043D5703	
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
		Monica Green ATL	11/24/09 900
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Notes: For all TO-15 Analyses: PCE, TCE, VC

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Fed Ex		NA	Good	Yes No (None)	0911556

Form 1293 rev.11

Geosyntec consultants

Data Validation Checklist
Level 1

Reviewed by: Laura Morales
Project/Task No: BR0090/16*6
Review Date: 28-Dec-09

	YES	NO
ATTACHED TO THIS FORM: 1) DATA REPORT COVER SHEETS	X	
2) LABORATORY NARRATIVE:	X	

Site: NMI
Laboratory Report # 912185
Sample Date: 6-Dec-09
Report Date: 16 December 1009

Answer all questions "Yes" or "No". Any answer in a box requires commen

Review Item	YES	NO	COMMENTS
Chain-of-custody correctly completed:	X		
Transcription errors in chain-of-custody, field forms, or lab reports.		X	
All data requested received:	X		
All analyses within holding times:	X		
Compounds detected below reporting limit:		X	
Surrogates within control for each sample:	X		
Reporting Limits Elevated by greater than 10X:		X	
Matrix Spike/Matrix Spike Duplicate (MS/MSD) within recovery control limits	n/a		
Relative percent difference (RPD) within control limits based on MS/MSD results:	n/a		
Laboratory Control Sample (LCS) within control limits:	X		
Continuing Calibration Verification (CCV) within control limits:	X		
Constituents detected above reporting limits in field equipment, travel or method blank samples:		n/a	
Any laboratory qualifiers applied to data:		X	
Laboratory corrective actions implemented:		X	
Are data acceptable quality:	X		
EDD received:	X		
EDD checked against hard copy:	X		
EDD ready for upload:	X		
Further Validation required:		X	

Comments: Final field pressures are consistent with lab receipt pressure (0.53" Hg - 1.5" Hg difference in measurements)

For sample 2254SS-1, the helium conc. in final screening bag (0.25%) was 1.3% of average shroud conc. (18%)
For sample 2254SS-2, the helium conc. in final screening bag (0.44%) was 2.2% of average shroud conc. (20%)

Air Toxics LTD.
Laboratory Services Since 1989

12/16/2009
Mr. Dave Adilman
GeoSyntec Consultants
289 Great Rd.

Acton MA 01720-4766

Project Name: NMI
Project #: BR0090
Workorder #: 0912185

Dear Mr. Dave Adilman

The following report includes the data for the above referenced project for sample(s) received on 12/8/2009 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Bryanna Langley at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Bryanna Langley
Project Manager

Air Toxics LTD.
Laboratory Services Since 1989

WORK ORDER #: 0912185

Work Order Summary

CLIENT:	Mr. Dave Adilman GeoSyntec Consultants 289 Great Rd. Acton, MA 01720-4766	**BILL TO:**	Accounts Payable GeoSyntec Consultants 5901 Broken Sound Parkway Suite 300 Boca Raton, FL 33487
PHONE:	978-263-9588	**P.O. #**	
FAX:		**PROJECT #**	BR0090 NMI
DATE RECEIVED:	12/08/2009	**CONTACT:**	Bryanna Langley
DATE COMPLETED:	12/16/2009		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	2254SS-2	Modified TO-15	4.0 "Hg	15 psi
02A	BD-1-12062009	Modified TO-15	4.0 "Hg	15 psi
03A	2254SS-1	Modified TO-15	0.5 "Hg	15 psi
04A	Lab Blank	Modified TO-15	NA	NA
05A	CCV	Modified TO-15	NA	NA
06A	LCS	Modified TO-15	NA	NA

CERTIFIED BY: Linda D. Fruman DATE: 12/16/09

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/10
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15
GeoSyntec Consultants
Workorder# 0912185

Three 1 Liter Summa Canister samples were received on December 08, 2009. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
Daily CCV	</= 30% Difference	</= 30% Difference; Compounds exceeding this criterion and associated data are flagged and narrated.
Sample collection media	Summa canister	ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction no performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: 2254SS-2

Lab ID#: 0912185-01A

No Detections Were Found.

Client Sample ID: BD-1-12062009

Lab ID#: 0912185-02A

No Detections Were Found.

Client Sample ID: 2254SS-1

Lab ID#: 0912185-03A

No Detections Were Found.

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: 2254SS-2

Lab ID#: 0912185-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**y121217**	**Date of Collection: 12/6/09 5:01:00 PM**	
Dil. Factor:	**2.33**	**Date of Analysis: 12/12/09 08:48 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
Trichloroethene	1.2	Not Detected	6.3	Not Detected
Tetrachloroethene	1.2	Not Detected	7.9	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	95	70-130
4-Bromofluorobenzene	104	70-130
1,2-Dichloroethane-d4	112	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BD-1-12062009

Lab ID#: 0912185-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**y121218**	**Date of Collection: 12/6/09**	
Dil. Factor:	**2.33**	**Date of Analysis: 12/12/09 09:27 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
Trichloroethene	1.2	Not Detected	6.3	Not Detected
Tetrachloroethene	1.2	Not Detected	7.9	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
4-Bromofluorobenzene	109	70-130
1,2-Dichloroethane-d4	109	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: 2254SS-1

Lab ID#: 0912185-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**y121219**	**Date of Collection: 12/6/09 6:16:00 PM**	
Dil. Factor:	**2.05**	**Date of Analysis: 12/12/09 10:00 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	1.0	Not Detected	2.6	Not Detected
Trichloroethene	1.0	Not Detected	5.5	Not Detected
Tetrachloroethene	1.0	Not Detected	7.0	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	94	70-130
4-Bromofluorobenzene	110	70-130
1,2-Dichloroethane-d4	112	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 0912185-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**y121212**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/12/09 04:53 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
4-Bromofluorobenzene	105	70-130
1,2-Dichloroethane-d4	107	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 0912185-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**y121209**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/12/09 02:15 PM**	

Compound	%Recovery
Vinyl Chloride	114
Trichloroethene	101
Tetrachloroethene	106

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
4-Bromofluorobenzene	101	70-130
1,2-Dichloroethane-d4	104	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 0912185-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**y121210**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/12/09 03:09 PM**	

Compound	%Recovery
Vinyl Chloride	113
Trichloroethene	101
Tetrachloroethene	112

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
4-Bromofluorobenzene	104	70-130
1,2-Dichloroethane-d4	107	70-130

Air Toxics Ltd. Sample Receipt Confirmation Cover Page

Thank you for choosing Air Toxics Ltd. We have received your samples and have listed any Sample Receipt Descrepancies below.

In order to expedite analysis and reporting, please review the attached information for accuracy.

For corrections call: **Bryanna Langley at 916-985-1000**

ATL will proceed with the analysis as specified on the Chain of Custody and Sample Receipt Summary page.

Please note : The Sample Receipt Confirmation, including the total workorder charge, is subject to change upon secondary review. Our aim is to provide a confirmation to you in a timely manner. Sample Receipt Discrepancies, if any, may not include discrepancies regarding sample receipt pressure(s). Additionally, the Chain of Custody (COC) will be provided with the final report.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 .FAX (916) 985-1020
Hours 6:30 A.M to 5:30 P.M. PST

Air Toxics LTD.
Laboratory Services Since 1989

SAMPLE RECEIPT SUMMARY

WORKORDER 0912185

Client

Mr. Dave Adilman
GeoSyntec Consultants
289 Great Rd.
Acton, MA 01720-4766

Phone

978-263-9588

Fax

Date Promised: 12/22/09
Date Completed:
Date Received: 12/8/09
PO#:
Project#: BR0090 NMI

Sales Rep: TL

Total $: $ 758.00
Logged By: MG

Fraction	Sample #	Analysis	Collected	Amount$
01A	2254SS-2	Modified TO-15	12/6/2009	$160.00
02A	BD-1-12062009	Modified TO-15	12/6/2009	$160.00
03A	2254SS-1	Modified TO-15	12/6/2009	$160.00

Misc. Charges	1 Liter Summa Canister (4) @ $25.00 each., Shipment 69037	$100.00
	6 Liter Summa Canister (1) @ $45.00 each., Shipment 69037	$45.00
	Blue Body Flow Controller (5) @ $25.00 each., Shipment 69037	$125.00
	Duplicate Sampling T (1) @ $8.00 each.	$8.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: Nuclear Metal/13657

BILL TO: Accounts Payable
GeoSyntec Consultants
5901 Broken Sound Parkway
Suite 300
Boca Raton, FL 33487

Analysis Code: TO-14A

TERMS:

Reporting Method: Modified TO-15 (Sh)-PCE, TCE & VC

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice

Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager: David Adilman
Collected by: (Print and Sign) T. Creamer / L. Morales [signature]
Company: Geosyntec Consultants Email: Jastiman / Tcreamer / lmorales @geosyntec.com
Address: 289 Great Rd Ste 105 City: Acton State: MA Zip: 01720
Phone: 978-263-9588 Fax: 978-263-9594

Project Info:
P.O. #
Project #: BR0070
Project Name: NWI

Turn Around Time: ☒ Normal ☐ Rush ____ specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N₂ He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
01A	225455-2	2387	12.6.09	17:01	TO-15	-29.61	-4.59		
02A	BD-1-12062009	34606	12.6.09	—	TO-15	-29.57	-4.53		
03A	225455-1	34109	12.6.09	18:16	TO-15	-29.57	-1.55		
	Empty	12036	—	—	—				
	Empty	94600	—	—	—				

Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
[signature] 12/7/09 / 1700	FedEx Tracking # 798199201095
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time: Monica Gassen ATL 12/8/09 925
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time

Notes:

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Fed Ex		NA	Good	Yes No (None)	0912185

Form 1293 rev.11

Air Toxics LTD.
Laboratory Services Since 1989

Method : Modified TO-15 (Sh)-PCE, TCE & VC

CAS Number	Compound	Rpt. Limit (ppbv)

CAS Number	Compound	
75-01-4	Vinyl Chloride	0.50
79-01-6	Trichloroethene	0.50
127-18-4	Tetrachloroethene	0.50

CAS Number	Surrogate	Method Limits
2037-26-5	Toluene-d8	70-130
460-00-4	4-Bromofluorobenzene	70-130
17060-07-0	1,2-Dichloroethane-d4	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Unreturned Media/Equipment

The following media/equipment are outstanding:

Shipped on: Nov 18 2009 1:35PM

Equipment Type	Physical ID	Outstanding Qty	Amount
Gauge-Vacuum		1	$50.00

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 .FAX (916) 985-1020
Hours 6:60 A.M to 5:30 P.M. PST
E-mail to:samplereceiving@airtoxics.com

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice

Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Page 1 of 1

Project Manager: David Adilman

Collected by: (Print and Sign) T. Greaney / L. Morales [signature]

Company: Geosyntec Consultants Email: tgreaney@geosyntec.com, lmorales

Address: 289 Great Rd Ste 105 City: Acton State: MA Zip: 01720

Phone: 978-263-9588 Fax: 978-263-9594

Project Info:
P.O. #
Project # BR0090
Project Name: NWI

Turn Around Time: ☒ Normal ☐ Rush ____ specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
01A	225455-2	2387	12.6.09	17:01	TO-15	-29.61	-4.59		
02A	BD-1-12062009	39606	12.6.09	—	TO-15	-29.57	-4.53		
03A	225455-1	34109	12.6.09	18:16	TO-15	-29.57	-1.55		
	Empty	12036	—	—	—				
	Empty	94600	—	—	—				

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
[signature]	12/7/09 / 1700	Fedex Tracking # 798199201095	
		Monica Greeben ATL	12/8/09 925

Notes:

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Fed Ex		NA	Good	Yes No (None)	0912185

Geosyntec consultants

Data Validation Checklist
Level 1

Reviewed by: Laura Morales
Project/Task No: BR0290/16K6

Review Date: 7/14/2010

		YES	NO
ATTACHED TO THIS FORM:	1) DATA REPORT COVER SHEETS	X	
	2) LABORATORY NARRATIVE:	X	

Site: NMI - Hurley VI
Laboratory Report # 1006319A

Sample Date: 6/6/2010
Report Date: 6/25/2010

Answer all questions "Yes" or "No". Any answer in a box requires comment

Review Item	YES	NO	COMMENTS
Chain-of-custody correctly completed:	X		
Transcription errors in chain-of-custody, field forms, or lab reports.	X		COC ID did not match Tag (Sample) for 225455-2. COC ID was used for Report.
All data requested received:	X		
All analyses within holding times:	X		
Compounds detected below reporting limit:		X	
Surrogates within control for each sample:	X		
Reporting Limits Elevated by greater than 10X:		X	
Matrix Spike/Matrix Spike Duplicate (MS/MSD) within recovery control limits	–	–	NA
Relative percent difference (RPD) within control limits based on MS/MSD results:	–	–	NA
Laboratory Control Sample (LCS) within control limits:	X		
Continuing Calibration Verification (CCV) within control limits:	X		
Constituents detected above reporting limits in field equipment, travel or method blank samples:		X	
Any laboratory qualifiers applied to data:		X	
Laboratory corrective actions implemented:	–	–	NA
Are data acceptable quality:	X		
EDD received:	X		
EDD checked against hard copy:	X		
EDD ready for upload:	X		
Further Validation required:		X	

Comments:

Air Toxics LTD.
Laboratory Services Since 1989

WORK ORDER #: 1006319A

Work Order Summary

CLIENT:	Mr. Dave Adilman GeoSyntec Consultants 289 Great Rd. Acton, MA 01720-4766	**BILL TO:**	Accounts Payable GeoSyntec Consultants 5901 Broken Sound Parkway Suite 300 Boca Raton, FL 33487
PHONE:	978-263-9588	**P.O. #**	BR0090-16*6
FAX:		**PROJECT #**	BR0090-16 NMI-Hurley VI
DATE RECEIVED:	06/14/2010	**CONTACT:**	Ausha Scott
DATE COMPLETED:	06/24/2010		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	2250SS-1	Modified TO-15	0.8 "Hg	15 psi
02A	2250SS-2	Modified TO-15	3.0 "Hg	15 psi
03A	BD-06062010	Modified TO-15	2.8 "Hg	15 psi
04A	2254SS-2	Modified TO-15	4.0 "Hg	15 psi
05A	Lab Blank	Modified TO-15	NA	NA
06A	CCV	Modified TO-15	NA	NA
07A	LCS	Modified TO-15	NA	NA

CERTIFIED BY: Linda D. Frumarn DATE: 06/25/10

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/10
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15
GeoSyntec Consultants
Workorder# 1006319A

Four 1 Liter Summa Canister (100% Certified) samples were received on June 14, 2010. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
Daily CCV	</= 30% Difference	</= 30% Difference; Compounds exceeding this criterion and associated data are flagged and narrated.
Sample collection media	Summa canister	ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

The Chain of Custody (COC) information for sample 2254SS-2 did not match the entry on the sample tag with regard to sample identification. The information on the COC was used to process and report the sample.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV
N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: 2250SS-1

Lab ID#: 1006319A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	1.0	3.8	5.6	20

Client Sample ID: 2250SS-2

Lab ID#: 1006319A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	1.1	1.2	6.0	6.5

Client Sample ID: BD-06062010

Lab ID#: 1006319A-03A

No Detections Were Found.

Client Sample ID: 2254SS-2

Lab ID#: 1006319A-04A

No Detections Were Found.

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: 2250SS-1

Lab ID#: 1006319A-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**6062207**	**Date of Collection: 6/6/10 11:04:00 AM**	
Dil. Factor:	**2.08**	**Date of Analysis: 6/22/10 11:29 AM**	

Compound	**Rpt. Limit (ppbv)**	**Amount (ppbv)**	**Rpt. Limit (ug/m3)**	**Amount (ug/m3)**
Trichloroethene	1.0	3.8	5.6	20

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	97	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: 2250SS-2

Lab ID#: 1006319A-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**6062208**	**Date of Collection: 6/6/10 12:30:00 PM**	
Dil. Factor:	**2.24**	**Date of Analysis: 6/22/10 12:03 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	1.1	1.2	6.0	6.5

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	96	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: BD-06062010

Lab ID#: 1006319A-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**6062209**	**Date of Collection: 6/6/10**	
Dil. Factor:	**2.23**	**Date of Analysis: 6/22/10 12:29 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	1.1	Not Detected	6.0	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	84	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: 2254SS-2

Lab ID#: 1006319A-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**6062210**	**Date of Collection: 6/6/10 2:07:00 PM**	
Dil. Factor:	**2.33**	**Date of Analysis: 6/22/10 01:41 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	1.2	Not Detected	6.3	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	94	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 1006319A-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**6062206**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 6/22/10 10:24 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	0.50	Not Detected	2.7	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	93	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 1006319A-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**6062202**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 6/22/10 07:31 AM**	

Compound	**%Recovery**
Trichloroethene	106

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	103	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 1006319A-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**6062203**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 6/22/10 08:16 AM**	

Compound	**%Recovery**
Trichloroethene	103

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	99	70-130

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager Todd Creamer
Collected by: (Print and Sign) Laura Morales/Todd Creamer
Company Geosyntec Consultants Email tcreamer@geosyntec.com lmorales@geosyntec.com
Address 289 Great Rd Ste 105 City Acton State MA Zip 01720
Phone 978-263-9588 Fax 978-263-9594

Project Info:
P.O. # BR0090-16*6
Project # BR0090-16
Project Name NMI-Hurley VI

Turn Around Time:
☒ Normal
☐ Rush
specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
01A	225055-1	2089	6/6/2010	1104	TO-15	-29.35	-0.39		
02A	225055-2	36480	6/6/2010	1230	TO-15	-28.17	-2.37		
03A	BD-06062010	37300	6/6/2010	—	TO-15	-28.18	-2.38		
04A	225455-2	35622	6/6/2010	14:07	TO-15	-29.04	-3.61		
	2250OA-1	9571	6/6/2010	1551	TO-15 LL	-29.57	-7.8		

Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time	Notes:
Laura Morales 6/7/10/1530	Fedex Tracking # (9612019) 3896631 10000663	~~PCE~~, TCE, ~~VC~~ LTM 6/7/2010 LTM 6/7/2010
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time Monica Groeber AL	
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time 6/14/10 1110	

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Fed Ex G		NA	Good	Yes No None (circled: None)	~~1006318~~ 1006319

Form 1293 rev.11

~~1006318~~ BW 6/14/10

Geosyntec consultants

Data Validation Checklist
Level 1

Reviewed by: Laura Morales
Project/Task No: BR0070/16XL

Review Date: 7/14/2010

ATTACHED TO THIS FORM:	YES	NO
1) DATA REPORT COVER SHEETS	X	
2) LABORATORY NARRATIVE:	X	

Site: NMI - Hurley VI
Laboratory Report # 1006319B

Sample Date: 6/6/2010
Report Date: 6/25/2010

Answer all questions "Yes" or "No". Any answer in a box requires comment

Review Item	YES	NO	COMMENTS
Chain-of-custody correctly completed:	X	☐	
Transcription errors in chain-of-custody, field forms, or lab reports.	☐	X	
All data requested received:	X	☐	
All analyses within holding times:	X	☐	
Compounds detected below reporting limit:	☐	X	
Surrogates within control for each sample:	X	☐	
Reporting Limits Elevated by greater than 10X:	☐	X	
Matrix Spike/Matrix Spike Duplicate (MS/MSD) within recovery control limits	NA	NA	NA
Relative percent difference (RPD) within control limits based on MS/MSD results:	NA	NA	NA
Laboratory Control Sample (LCS) within control limits:	X	☐	
Continuing Calibration Verification (CCV) within control limits:	X	☐	
Constituents detected above reporting limits in field equipment, travel or method blank samples:	☐	X	
Any laboratory qualifiers applied to data:	☐	X	
Laboratory corrective actions implemented:	–	–	NA
Are data acceptable quality:	✓	☐	
EDD received:	✓	☐	
EDD checked against hard copy:	✓	☐	
EDD ready for upload:	✓	☐	
Further Validation required:	☐	✓	

Comments:

Air Toxics LTD.
Laboratory Services Since 1989

6/25/2010
Mr. Dave Adilman
GeoSyntec Consultants
289 Great Rd.

Acton MA 01720-4766

Project Name: NMI-Hurley VI
Project #: BR0090-16
Workorder #: 1006319A

Dear Mr. Dave Adilman

The following report includes the data for the above referenced project for sample(s) received on 6/14/2010 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Ausha Scott at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Ausha Scott

Project Manager

Air Toxics LTD.
Laboratory Services Since 1989

6/25/2010
Mr. Dave Adilman
GeoSyntec Consultants
289 Great Rd.

Acton MA 01720-4766

Project Name: NM1-Hurley VI
Project #: BR0090-16
Workorder #: 1006319B

Dear Mr. Dave Adilman

The following report includes the data for the above referenced project for sample(s) received on 6/14/2010 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Ausha Scott at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Ausha Scott

Project Manager

Air Toxics LTD.
Laboratory Services Since 1989

WORK ORDER #: 1006319B

Work Order Summary

CLIENT:	Mr. Dave Adilman GeoSyntec Consultants 289 Great Rd. Acton, MA 01720-4766	**BILL TO:**	Accounts Payable GeoSyntec Consultants 5901 Broken Sound Parkway Suite 300 Boca Raton, FL 33487
PHONE:	978-263-9588	**P.O. #**	BR0090-16*6
FAX:		**PROJECT #**	BR0090-16 NM1-Hurley VI
DATE RECEIVED:	06/14/2010	**CONTACT:**	Ausha Scott
DATE COMPLETED:	06/25/2010		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
05A	2250OA-1	Modified TO-15	7.5 "Hg	5 psi
05AA	2250OA-1 Lab Duplicate	Modified TO-15	7.5 "Hg	5 psi
06A	Lab Blank	Modified TO-15	NA	NA
07A	CCV	Modified TO-15	NA	NA
08A	LCS	Modified TO-15	NA	NA

CERTIFIED BY: Linda D. Frumarn DATE: 06/25/10

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763,
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/10
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15
GeoSyntec Consultants
Workorder# 1006319B

One 6 Liter Summa Canister (SIM Certified) sample was received on June 14, 2010. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
ICAL %RSD acceptance criteria	+- 30% RSD with 2 compounds allowed out to < 40% RSD	30% RSD with 4 compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	</= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases
Sample collection media	Summa canister	ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.
UJ- Non-detected compound associated with low bias in the CCV
N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

Air Toxics LTD.
Laboratory Services Since 1989

Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: 2250OA-1

Lab ID#: 1006319B-05A

No Detections Were Found.

Client Sample ID: 2250OA-1 Lab Duplicate

Lab ID#: 1006319B-05AA

No Detections Were Found.

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: 2250OA-1

Lab ID#: 1006319B-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s062205**	**Date of Collection: 6/6/10 3:51:00 PM**	
Dil. Factor:	**1.79**	**Date of Analysis: 6/22/10 12:25 PM**	

Compound	**Rpt. Limit (ppbv)**	**Amount (ppbv)**	**Rpt. Limit (ug/m3)**	**Amount (ug/m3)**
Trichloroethene	0.18	Not Detected	0.96	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	96	70-130
Toluene-d8	105	70-130
4-Bromofluorobenzene	98	70-130

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Client Sample ID: 2250OA-1 Lab Duplicate

Lab ID#: 1006319B-05AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s062206**	**Date of Collection: 6/6/10 3:51:00 PM**	
Dil. Factor:	**1.79**	**Date of Analysis: 6/22/10 01:11 PM**	

Compound	**Rpt. Limit (ppbv)**	**Amount (ppbv)**	**Rpt. Limit (ug/m3)**	**Amount (ug/m3)**
Trichloroethene	0.18	Not Detected	0.96	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	99	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1006319B-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s062204**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 6/22/10 11:35 AM**	

Compound	**Rpt. Limit (ppbv)**	**Amount (ppbv)**	**Rpt. Limit (ug/m3)**	**Amount (ug/m3)**
Trichloroethene	0.10	Not Detected	0.54	Not Detected

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	93	70-130

Air Toxics LTD.
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Client Sample ID: CCV

Lab ID#: 1006319B-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s062202**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 6/22/10 10:31 AM**	

Compound	**%Recovery**
Trichloroethene	116

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	87	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	104	70-130

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Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 1006319B-08A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**s062203**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 6/22/10 11:02 AM**	

Compound	**%Recovery**
Trichloroethene	105

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	103	70-130

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

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Collected by: (Print and Sign) Laura Morales/Todd Creamer
Company Geosyntec Consultants Email tcreamer@geosyntec.com lmorales
Address 289 Great Rd Ste105 City Acton State MA Zip 01720
Phone 978-263-9588 Fax 978-263-9594

Project Info:
P.O. # BR0090-16*6
Project # BR0090-16
Project Name NMI-Hurley VI

Turn Around Time:
☒ Normal
☐ Rush
specify

Lab Use Only
Pressurized by: ____
Date: ____
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
	225055-1	2089	6/6/2010	11:04	TO-15	-29.35	-0.39		
	225055-2	36480	6/6/2010	12:30	TO-15	-28.17	-2.37		
	BD-06062010	37300	6/6/2010	—	TO-15	-28.18	-2.28		
	225455-2	35622	6/6/2010	14:07	TO-15	-29.04	-3.61		
05A	225000A-1	9571	6/6/2010	15:51	TO-15 LL	-29.57	-7.8		

Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time	Notes:
Laura Morales 6/7/10/1530	Fedex Tracking # (9612019) 3896631 10000663	~~PCE~~, TCE, ~~VC~~ LTM 6/7/2010 LTM 6/7/2010
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time Monica Grebben ATL 6/14/10 1110	
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time	

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Fed Ex G		NA	Good	Yes No (None)	~~1006318~~ 1006319

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~~6I8900I~~